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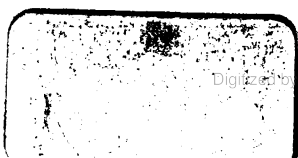
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PROCEEDINGS  
OF THE  
KANSAS MEDICAL SOCIETY.

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TWENTY-NINTH ANNUAL MEETING.

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HELD IN THE  
CITY OF TOPEKA,

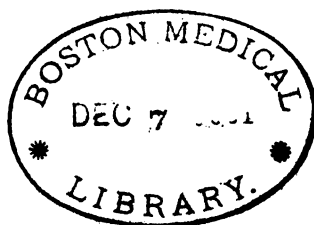
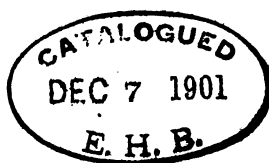
MAY 16 AND 17, 1895.

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REPORTED BY C. H. NETTLES,  
TOPEKA, KAS.

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TOPEKA:  
KANSAS MEDICAL JOURNAL.  
1895.





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DR. J. A. LANE,	DR. C. KLIPPEL,	DR. G. W. HOGEBOOM.
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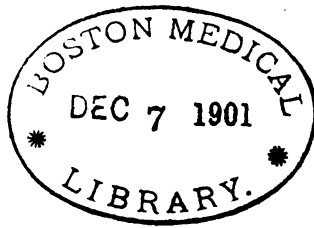
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## PRESIDENTS OF THE KANSAS MEDICAL SOCIETY, ELECTED IN THE YEARS FOLLOWING.\*

DR. S. B. PRENTIS, . . . . .	1859	DR. B. E. FRYER, . . . . .	1880
DR. J. P. ROOT, . . . . .	1860	DR. J. H. STUART, . . . . .	1881
DR. C. A. LOGAN, . . . . .	1866	DR. G. W. HALDERMAN, . . . . .	1883
DR. ALBERT NEWMAN, . . . . .	1867	DR. D. W. STORMONT, . . . . .	1883
DR. JOHN PARSONS, . . . . .	1868	DR. C. H. GUIBOR, . . . . .	1884
DR. M. BAILY, . . . . .	1869	DR. H. O. HANNAWALT, . . . . .	1885
DR. M. S. THOMAS, . . . . .	1870	DR. F. D. MORSE, . . . . .	1886
DR. DANIEL C. JONES, . . . . .	1871	DR. L. A. BUCK, . . . . .	1887
DR. W. W. COCHRAN, . . . . .	1872	DR. J. BELL, . . . . .	1888
DR. H. K. KENNEDY, . . . . .	1873	DR. C. C. GREEN, . . . . .	1889
DR. R. S. REDFIELD, . . . . .	1874	DR. J. E. MINNEY, . . . . .	1890
DR. TIFFIN SINKS, . . . . .	1875	DR. J. E. OLDRAM, . . . . .	1891
DR. H. L. ROBERTS, . . . . .	1876	DR. F. F. DICKMAN, . . . . .	1892
DR. W. L. SCHENOK, . . . . .	1877	DR. GEO. W. HOGEBOOM, . . . . .	1893
DR. C. C. FURLEY, . . . . .	1878, 1879	DR. W. R. PRIEST, . . . . .	1894

\*Met at Lawrence, February 27, 1861. No meeting until 1866, no quorum being present. Met at Lawrence, April 3, 1866.



## PROCEEDINGS.

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### MORNING SESSION—THURSDAY.

The twenty-ninth annual session of the Kansas Medical Society convened at Representative Hall, Topeka, Kas., on Thursday morning, May 16, at 9 o'clock, President W. R. Priest, in the chair. Vice-President Geo. M. Gray, M.D., Recording Secretary G. C. Purdue, M.D., Corresponding Secretary G. A. Wall, M.D., also present.

**PRESIDENT:** You will be in the hands of the Committee on Arrangements for awhile. Dr. Ward, chairman, will make his report.

Dr. WARD, chairman of the committee, made the following report:

The Committee on Arrangements has but little to say in the way of a report. As you see, we have the use of this hall; the committee rooms are also at our disposal. I suggest that all members register at the Secretary's desk, and pay their dues. It will be necessary to do this before you can get a badge. The rates at the hotels you will find printed on the program.

You are all cordially invited to attend a reception at No. 333 Greenwood avenue, Potwin Place, to-night. I desire to say that Mrs. Stormont will be present, and you will have an opportunity and the pleasure of meeting one of the most philanthropic women in Kansas.

There will be a banquet to visiting doctors at the Cope-

land Hotel, Friday evening at 10 o'clock, to which you are cordially invited. I should be glad if those who intend to remain for the banquet would give notice at the Secretary's desk, so that we may know as nearly as possible how many we shall have.

**PRESIDENT:** Dr. Embree will now deliver the invocation.

**Dr. EMBREE:** We thank Thee, as the giver of all good and perfect gifts, for the health that we enjoy, for the opportunities that lie around and about us, for this occasion upon which we are entering, and we pray that Thy blessing may rest kindly upon us. Help us to thank Thee for the land in which we live, for the peace that we enjoy; for all that Thou hast given us, and help us to do the things that are right in our sight; to meet the great objects Thou hadst in mind when Thou didst create us and set us in the world. Inspire us, we beseech Thee, with a true knowledge of the great and grave responsibilities which rest upon us because of the life that we have, the opportunities that we enjoy. Look Thou kindly upon this meeting of Thy children; wilt Thou bless them; wilt Thou give them wisdom; wilt Thou give them understanding; wilt Thou so direct them from hour to hour in the various exercises of this occasion that they may be greatly profited; wilt Thou help them, we beseech Thee. Bless them as physicians; bless them in their contact with the people in their endeavor to cure disease, as they become the repositories of the secrets of the people, as they oftentimes have in their hands the honor of men and women.

Grant, O Father, to make them Thy children; impress them with the fact that Thou art a helper unto all that call upon Thy name. Bless us altogether, and keep us, now and forever, we ask for Christ's sake, amen.

In the absence of Mr. J. G. WATERS, who was to have

delivered the address of welcome, the same was read by Dr. WARD.

#### ADDRESS OF WELCOME.

It were but an act of the commonest courtesy and justice, when such a distinguished assemblage of eminent citizens of the State comes within the gates of the capital city, for the community, with universal hand, to extend its hospitality and good cheer; to write upon its doorposts and to embellish with transparency the high honor these guests have conferred upon us; and then, have the tongue of its spokesman weave into the choicest fabric of human speech such words of welcome as go straight to the heart, and find lodgment there as memories fit to be hung within its sacred chambers. The house a Cæsar has honored by his presence is no longer commonplace.

Among our visitors are the young and old, the Nestor and the graduate; the trained specialist, the studious professor, the learned author, the profound and successful practitioner, and I hope, also, the delightful and beloved country doctor. Were you a conclave of warriors fresh from fields made glorious by your presence, we would meet you with flags and greet you with the blast of trumpets. A living fringe of childhood would border the avenues along which might lie your triumphal procession. From the high dome of the Capitol to our farthest boundary, the city would apparel itself with all that pride, pomp and circumstance which every age and country have ungrudgingly given its captains. We would follow your plumes wherever they tossed, with loud acclaim and outspoken laudation. The very hours of your presence in this city would be an aroma here, and a fragrance there, of beauty, bloom and bays, and hands could not wreath all the chaplets of laurel that valorous hearts would wish to bind upon your brows.

You have come from greater battles and from more distinguished fields of victory. There have not been a

dozen wars in the era of civilized man which humanity would care to mark with a commemorative stone. But there have been butcheries, for the conquest of a cliff or the surrender of an island; for the plunder of a continent; for a sordid ambition which desired to topple all thrones and on their ruins rise dictator to a world; to uphold a dynasty, and to destroy a people who had come to think of liberty. It was those barbaric affairs the historian has been compelled to chronicle to find his pages of interest in the annals of men. A single paragraph tells the story of Christ, but it has taken libraries to rehearse the battles of his savage contemporaries. The warrior is prompted by the lures of earthly plaudit and measureless ambition. He is given the chief seat at the banquet feast. In the council halls, he is honored above his fellows. And at last, when he dies, his is the one tall shaft in the silent Greenwood that lifts, above all his comrades in repose, the eagles of glory in perennial bronze to the eternal skies. The soldier has his battles with a known and tangible foe; with an enemy whose pagan bloodthirstiness is controlled by a code of so-called Christian rules of warfare. He intelligently feels his way and ascertains the locality of the bristling front with which he must contend. From an eminence he locates its batteries and the sunlight flashes in his face the glisten of bayonets, miles and miles away. His knowledge of history gives him a clear guess of the capacity of the opposing country and its resources and supplies, and the measure of its armament. Deserters inform him of its *esprit de corps* and general discipline. His battles are fought in the daytime. When night envelops the world and makes the uniforms and flags of the contending forces blend into a common color, and effaces all that distinguishes them as enemies, the duellers are curtailed in peaceful sleep, and a wizard hand paints mystic pictures on the intangible canvas of dream that only vanish with the long-resounding call that ushers in returning morn. He fights behind a bas-

tion of masonry, in front of him is seventeen inches of armor plate, or a ponderous wall of iron. His weapons of offense are all that ingenuity can invent or a government can buy. He is never caught in an ambuscade, except by the want of his own caution. He can proceed leisurely to invest the enemy and starve him by his encircling zigzags and parallels. In the opens, upon a field whose detailed topography is marked upon the map which he carried in his hand; and it is under such advantageous circumstances that Valor spurs its steed, double-shots its guns, pulls its lanyards, and rushes to the charge. And it is at such times and by such means he earns his laurels and compels fame to become tribute to his personal prowess.

On no such fields as these, with no such armament and against no such foes, have you waged your unequal contests. For no such petty or ignoble purposes, and for no such miserable atrocities.

Your march is through the black night into which you have plunged, with only the torch to guide, which your own hand uplifts. It is over a country whose geography no mortal has mapped. Your foe is always found in the depths of an ambuscade. No stray shot from his outposts betrays his position. No deserters come into your lines with information. What captives you have are taken prisoners of war in red-handed fight. The enemy is guarded by a strong picket line of infection, more deadly than the poisoned bullet. The half divine impulse, which comes from the fanfarronade of advancing flags, the roar of guns, the shouting of the captains, the crash of musketry, the prancing horse and the companionship of multitudes, is in your case wanting. Your attendants are sorrow and pain and not a witness to note the progress of the fight. If the world does not give so splendidly of its fame as it does to the soldier, it is not wanting in a great respect and affection for the physician.

A doctor, as well as the soldier, has the liberty of

choice in the selection of pursuits. He knew of the great ocean of life; he knew the star that he must sight to guide his boat through the buffeting waves into the roadstead of fame across the tumult of seas. He designedly refused to point his prow for such a course. I am modestly inclined to deny the truth of the assertion that peace hath her victories no less renowned than war. The inventor of chloroform dulls the pain that a hundred slaughterers like Napoleon may cause. One should stand with the gods on high Olympus, and the other should, as ages come and eons go, be an undying spectator of all the inexcusable and miserable sorrows he has caused: "full in the sight of Paradise, beholding Heaven and feeling hell." When victories of peace become renowned and are celebrated, the tomb of the first Consul must be forgotten.

In all his brave battles the doctor has never suffered a defeat; his lines have been constantly advanced. The foes he pursues are in flight, and are being constantly pressed in retreat.

These valiant men, these greater than warriors, are our guests to-day. They come without banners and capture our hearts. Unobsequious, modest, sedate, unpretentious and great. The soldier seeks fate for personal ambition and the doctor avoids it for the good of his kind. I do not desire to lay upon the expression of complimentary speech, more than the traffic will bear. Having a slight knowledge of the ethics of your profession, it is just and honest to say at all times that you have investigated and experimented and have found much of the greatest value to the human race. But you have never sought to profit by the value of your labors; it has been given at once to humanity. There have been a protest and criticism coming at once from your ranks when the formula has been withheld from the public. You assert as scientific men the cause must be known. It is the best and grandest assertion of your profession, and rises to



the dignity of exalting it. A court in Kansas has recently made a far-reaching decision based upon its wisdom and justice. If the medical profession had desired to profit by their own achievements it could have made a monopoly and trust more powerful than the Standard Oil or Sugar. The people get to understand these things.

The civilized man has the modern appliances at his hand, where his wants are controlled by a button; but if he ever profits by his civilization and enjoys the life all his accessories have given into his charge he must credit much to the doctor. He has taught us the necessity of pure water. He has made us know the danger of no drainage and vicious cess pools, and the necessity of good sewerage. He has been pronounced upon the blessings of ventilation and fresh air. He has taught us the philanthropy of care and cleanliness. He has bequeathed to the world the delightful boon of public hospitals, where sick and wounded have a better care than the private home affords. He has brought plagues and epidemics under his control, and made all the ills which flesh is heir to pliant to his intelligent treatment. If there are any steps in our progression upward to a higher or better civilization than the treatment of the sick, the world is unadvised of it. The knife of the surgeon has been stripped of its terror. The patient sleeps during capital operations and awakes in astonishment to find himself dismembered. The care of the hurt and the marvelous recovery from wounds or operations by anti-septic precautions are still wonders among a network of marvels.

I have no other function to perform than to speak the word of welcome, and it could not be done without allusion to the great profession to which they do so much honor. A Kansas doctor is an up-to-date representation of the state of his science. I know him to be so. And when the speaker was given license to speak, he took the privilege to free his mind of what he thought and knew

of the big-brained, many-sided, intelligent and level-headed men belonging to your society he has met in the last quarter of a century in this State.

And for all the good people of this paragon among beautiful cities, as benedictions might fall, so do we shower upon you all kindly wishes; that with many years of health and happiness, there may be added to the store of each member of the Kansas Medical Society increasing profit, usefulness and honor.

Dr. GEORGE W. HOGEBOM delivered the following response to the "Address of Welcome:"

*Mr. President, Ladies and Gentlemen:* The members of the Kansas Medical Society have entrusted to me the pleasant duty of expressing their thanks for this generous welcome. Though I am myself a citizen of Topeka, I trust it will not be deemed out of place to say in behalf of my professional associates from the State at large, that we needed no assurance that this beautiful city would receive them in the spirit of true hospitality. Topeka is always at home to the people of Kansas, and the people of Kansas are always at home in Topeka. The capital of a State should be a type of the State, and Topeka, I think, may claim to fairly reflect the ideas, the traditions, and the hopes of this great commonwealth. As members of a profession which claims a share in the splendid record of Kansas, we give you our thanks and a pledge that this Society will always be found abreast with the foremost in advancing the welfare and the happiness of her people.

The physician holds a curious relation to society. Like the lawyer, he is sometimes regarded more as a necessary evil than as a real benefactor. But from time immemorial the healing art has been practiced with more or less success, and the science of medicine has moved along, steadily if not rapidly, until it can point to triumphs which all the world acknowledges and admires. It is undoubtedly

true that the medical profession is a conservative one, and it has been said, perhaps justly, that we are slow in recognizing, and slower in adopting, improved methods and valuable discoveries. But it should be remembered that the problems with which the medical profession deals are the most abstruse and the most difficult in the entire realm of science. The causes of disease are often hidden behind an impenetrable veil, and life itself is a mystery. It is not strange that men who have such responsibilities as are daily put upon the physician should cling to what has been tried and demonstrated rather than to dare the chances of conjecture and speculation. But if our progress has been slow, it has been steady and sure. It was a long step from Galen to Harvey, and a longer one—though not in years—from Harvey to the common practitioner of today, who, in every city and village, is applying methods and remedies of which our predecessors a century ago were profoundly ignorant. The homely adage, "An ounce of prevention is better than a pound of cure," has a deeper meaning in our time than ever before. It is a greater victory to prevent disease than to cure it. Jenner was a benefactor of his race, and the brilliant discoveries of recent times have immeasurably increased the store of human happiness. We are learning how to keep the foe at a distance instead of grappling him in a hand-to-hand conflict. The average duration of life in civilized countries is increasing. This means that the death rate is diminishing. In other words, knowledge is gaining upon ignorance. Improved sanitary conditions, greater attention to hygienic laws, better food and better ventilation are lengthening our lives beyond the span allotted to our fathers, notwithstanding their simple habits and plain diet, which are supposed to be conducive to longevity. In the field of surgery the progress made has been almost marvelous. The use of anæsthetics and antiseptic procedures has revolutionized the methods of the past, and turned excruciating pain

into a pleasing insensibility, and suppurative delay and depletion into early and vigorous convalescence. All these things are the gifts of medical science to humanity. They have been patiently wrought out by study and experiment, and the world has adopted them without stopping to inquire in what brain they had their origin. The members of a profession which counts such achievements in its history have a right to be proud of their calling. They need not blush to be called slow, nor take offense when denominated old fogies. They have done their full share of the work which the Almighty gave to man when he set before him the task of finding out in his own way the laws of his own being.

The Kansas Medical Society is, I hope, not unworthy of the profession to which its members belong, nor the State in which they live. As an association, it stands for what is best in the profession; for high standing of ethics; for the wisdom of the past and greater wisdom of the future. It gives welcome to every discovery which can alleviate suffering or ward away disease, but it does not forget that patient, steadfast effort is the road to excellence in every profession and in every calling. To be able to cure all diseases is a most brilliant accomplishment, but I am happy to say that physicians who are able to perform this feat are not eligible to membership in our society. We hope and believe that by this organization we shall do something worthy of our profession, and in many ways be helpful to the people among whom our lot is cast. Some who were with us a year ago, honored and esteemed by all, will meet with us no more. Dr. M. C. Farrar of Atchison, Dr. B. F. Hepler of Fort Scott, and Dr. H. W. Morgan of Clay Center have died within the year. And none of us will forget two others, who were citizens of Topeka and familiarly known to a wide circle of friends. One was a young man of high promise, who had already reached eminence in his profession by merits which were recognized wherever he was known, Dr. Reid

Alexander. The other was a soldier, scholar, gentleman, friend, and an honor to our calling, Dr. M. O'Brien.

I am not the possessor of such gifts of language as have been bestowed by nature upon the eloquent gentleman who bids us welcome to Topeka. If our hearts could speak we would give back more fitting words to express our grateful appreciation of the hearty kindness and good will of this reception. All we can do is to tell the people of this goodly city that we thank them one and all.

#### PRESIDENT'S ADDRESS.

*Members of the Kansas Medical Society:* The knowledge of the truth is essential in the case, as the end of litigation is not always justice, notwithstanding the medical profession is the most absolute, the most progressive, the most positive of any of the professions. However, it is true that to know all of the sciences thoroughly is impossible to anyone, no matter how brilliant he may be, but a familiarity with the sciences may be expected of him. But as the physician is the most neglected of any of the professions from a legislative standpoint, he is in the whole course of his duties often exposed to ill-timed and often unjust criticisms, and as the law now stands may be called to defend his reputation by one who has nothing to lose and everything to gain.

The discussion of the civil relations of the physician involves not what is usually taken for granted, the ignorance of the physician of his duties to the public, but the ignorance of the public as to its duties to him—an ignorance constantly increasing through our philanthropy.

It has been said, "the physician no longer towers above the community as a member of that famous aristocratic triumvirate of the first three decades of the present century, the 'parson,' the 'squire,' and the 'doctor,' and he has not kept pace with the commercial progress of the day." While there may be no American physicians who are heard with such respect on social and eco-

nomie questions as were Dr. Rush and the medical signers of the Declaration of Independence, or universally accepted as an oracle on legal medicine as was Hipocrates in his day, does not indicate to me in any sense a decline in the medical profession, or that the "doctor" has fallen below the "squire" or the "parson." If we are on the decline it is on the line of legislative neglect; we have aimed to keep pace with the commercial progress of the day, and if we have failed to progress in this particular, it is because we have conducted our practice too much as a philanthropic pursuit.

The profession, while maintaining its hold, is the prey of the venal press, of the shyster lawyer, the demagogue judge and their creation, the blackmailer, because of our philanthropy and the resultant general opinion that the profession is the slave of the beck and call of the debt-dodging community. The notion that the profession is the unpaid abject slave, is further shown in the demand for the gratuitous expert and autopsy services. The sole presumptive evidence for the widespread claim that the profession is affected by public use is the jury-exemption privilege. This exemption has far from the wide-reaching significance that is generally given to it. The demand for gratuitous statistics is one expression of this opinion that the profession must furnish such statistics gratuitously; yet, as a rule, courts have not sustained the claim that the profession must furnish such statistics gratuitously. The principle (on which reports of contagious diseases are demanded) is based entirely on the police power of the State, and is binding on the physician to the extent of an ordinary citizen, but no more. He, however, incurs greater civil responsibility in the event of his non-report or neglect of quarantine. The crucial test of how far the State's power extends in contagious diseases has never been applied since the venereal diseases are as yet not embraced in the contagious diseases acts. The profession is not affected with a public

use except where other public demands may interfere with the specific use in certain instances. The jury-exemption privilege is for the benefit of the public, not of the physician, hence this exemption creates no right by the State to further duties as compensation, and demands for gratuitous expert services and autopsies are entirely unconstitutional and illegal.

The Kansas Medical Society has a duty here in common with its other duties in organizing the State profession. It should urge upon every society affiliated with it the necessity for a standing committee devoted to the civil relations of the profession in connection with allied purposes. Another fact cited in evidence of a public use affecting the practitioner is the sacred nature attached (to the common law, according to Judge Field of the United States Supreme Court,) to professional confidence, whether under the common law principle (as Judge Field claims), or under specific statutes (which contradictory decisions of judges have led legislatures to enact), the privilege can be waived only by the patient himself. It is simply an extension of the beneficent common law axiom (under which torture was always illegal under English law) that no man can be compelled to criminate himself. By demand for an itemized bill in a suit for services the patient expressly waives (under numerous decisions) this right. Hence, professional confidence is no evidence of the public use affecting the profession. The disagreement in consultations should teach the medical man that disagreement by itself is no evidence either of lack of skill or dishonesty. And the disagreement upon the witness stand is often not duly accredited by the judiciary, which should have a better consideration by them, as two-thirds of the cases submitted to the supreme courts, or courts of appeal, the English-speaking world over, disagree, sometimes equally, which goes to show that a year's evening study of law in a legal sun-down diploma-mill does not make a mediocre intellect an omniscient mas-

ter of science, as Judge Doe, of New Hampshire, long ago held that in scientific questions judges should proceed on the evidence alone, and when they set themselves up as witnesses they should be sworn and cross-examined. The judicial cant about expert disagreement, too often echoed, received an apt judicial rebuke, as when the New York Court of Appeals scored shyster-made law, otherwise judicial dicta. Much understood as is Pope's wrongly applied dictum anent doctors of theology:

"Who shall decide when doctors disagree,  
And soundest casuists doubt like you and me."

Yet even the disagreement of theology far from equals the disagreement of doctors of law.

Every medical witness needs protection against cross-examination scurrility, as medical men as a rule are honest in their opinion, earnest in their desire to tell the exact truth, and to arrive at a clear and just understanding of the case—thinking first of the good they can accomplish in the case before them. They are as a class self-sacrificing, and I believe it is strictly true to say that when they go on the witness stand they have a strong desire to tell the truth in the best possible way and without partisanship or bias. However the opinion of a medical witness is based frequently upon technical evidence, which cannot be explained to those not educated in his line of thought, and with a hypothetical question the changing of a single word will give grounds for medical experts to differ. The popular idea in the profession is to have the experts appointed by the court in cases of not exact solution, and should be chosen entirely by the judges from legally qualified practitioners of at least five years' practice, in good standing in the specialty they practice. The selection of physicians in good standing implies a proper medical practice act. This depends for its value to the public and its permanency on the flexibility of its definitions and of the absence from it of *ex post facto* elements.



The opinion of the physician should be given on the evidence of both State and defense embodied in hypothetical questions. They should know nothing of the case other than as evidence, and should be, as the law contemplates, excluded from testifying as to the facts. They should be subject to cross-examination, by both State and defense, but such cross-examination should be limited to the matters embodied in the hypothetical case. Legislation along this line would gradually develop officers of the court who would be free from bias and would occupy a truly judicial position. However, under the constitution, the accused cannot be denied the right to call an expert. In civil cases a similar class of court officials would be created, independent by the experts called by either side. When an expert has made a personal examination he unconsciously acquires a personal bias, "an opinion in the case" which legally incapacitates him for the judicial position of a "friend" of the court. Some beneficial results would be accomplished in this way. The restoration of the expert to his position of *amicus curie*. And in criminal cases, therefore, the expert would be required, if he conscientiously can, to accept an explanation consonant with innocence, in place of constituting himself a species of prosecuting attorney to find evidence sufficient to convict, in lieu of science.

Also, there would be a decrease in the abuse of cross-examination, finally preventing assaults on the physician's reputation by baseless, irrelevant innuendoes, not consistent with the tests of knowledge. While in some jurisdictions there are constitutional and statutory provisions for the payment or compensation to medical witnesses as experts in addition to the usual witness fees, and providing a fund for that purpose, no such provisions seem to exist in this State. Physicians being exempt from jury service in the interest of the public, should be exempt as well from attendance on the trial of a case as a witness, beyond that of any ordinary witness. He

should not be required to testify as an expert without securing what his time and services are reasonably worth, and the Legislature should provide that before a medical witness should be required to testify as to his peculiar knowledge, he should be permitted to demand and receive his fee as an expert, the amount thereof to be fixed by law. The law of evidence in criminal cases requires guilt to be proved beyond a reasonable doubt; in civil cases preponderance of testimony only is required. A source of great evil and danger to the profession is of precedents, and we should be watchful of letting precedents being established, since justice distorted against the guilty afterwards oppresses the innocent. There is no legal obligation on the part of a physician to obey a call. If he does obey one call gratuitously, he is legally bound to attend a case so long as his care is needed, or until he be dismissed or gives due notice. Two cases not entirely creditable to the medical man concerned settled the principle that contracts for medical services are ordinary contracts and voidable by the violation of the terms of contract. Two surgeons (one in Hagerstown, Md., the other in Chicago, Ill.,) were called upon for treatment of wounds received in a street fray. Both asked if the patient was prepared to pay; upon an affirmative reply, both dressed and sutured the wound. Upon non-payment both cut the sutures and were arrested for assault. Both were acquitted on the ground that they were within their strict legal right in so doing. The physician is hence not bound to attend gratuitously the poor, but if he so does, he is bound to use due diligence in his treatment of the case, while the patient, on the other hand, is bound to be frank about his case and follow medical directions.

The medical profession should be protected by a proper and efficient law for the collection of their fees. This should be done not only in the interest of the profession, but in behalf of the people as well. Our ranks are full

of heroic and self-sacrificing men full of the milk of human kindness, who are ready and willing to attend all calls whether demanded by the opulent and wealthy or the poorest of God's creatures. When a physician gives his time, living and skill, at all times, day time or night time, without regard to the conditions of the elements, he should have some assurance of obtaining compensation therefor. With the liberal exemption laws of this State, there are many who are really able to pay and yet could not be compelled to do so. I would think a law ought to be enacted providing that there should be no exemption of property from the payment of physicians' fees.

The medical practice act works best when the State University is essentially a supervisory body of all the educational interests of the State. In dealing with medical practice there is always several important medico-legal questions. The legal principles governing the question of civil malpractice stand as laid down in the leading case of *Lamphier v. Philpos*, by Chief Justice Tyndall: "Every person who enters into a learned profession undertakes to bring to the exercise of it a reasonable degree of care and skill. He does not, if he is an attorney, undertake at all events to gain the cause, nor does a surgeon undertake to use the highest possible degree of skill, as there may be persons of higher education and greater advantages than himself, but he undertakes to bring a fair, reasonable and competent degree of skill. And in an action against him by a patient the question for the court or jury is whether the injury complained of must be referred to a want of proper degree of skill and care in the defendant or not. Hence he is never presumed to engage for extraordinary skill, or for extraordinary diligence and care. As a general rule he who undertakes for a reward to perform any work is bound to use a degree of diligence, attention and skill adequate to the performance of his undertaking; that is, to do it according to the rules of the art. And the degree of skill rises in

proportion to the value and delicacy of the operation. But he is in no case required to have more than ordinary skill for he does not engage for more. A corollary of these rules is, that the physician must give proper instructions to his patient how to take care of himself, how to arrange a diseased or injured member, when and how to take any medicine that may be prescribed, what diet to adopt: and that in case the physician fails to give these instructions he is liable for any injuries that result from failure. The patient is bound to follow obediently all proper directions given him by his physician or surgeon, as to his diet, mode of life, time of taking and quantity of medicine to be taken, or the care of a diseased or injured member. Any disobedience of such directions which contributes to prevent a recovery, will bar him from his right of action for malpractice even though the medical man may have been somewhat negligent."

In this brief view of the civil status of the profession certain evils are evident and certain remedies obvious. The first step is proper local organization. To this end every county in the State should have its incorporated medical society, to which should be admitted every legal practitioner who does not adopt a sectarian title and abides by ordinary professional etiquette. Each of these societies should have a special committee devoted to the civil relations of the profession, for whose support a definite fund should be created. The functions of this committee should consist first of securing information on which to base future legislation. Unless based on data of value, such legislation is useless. To the same committee should be assigned the duty of regulating the fees of physicians for autopsies and expert services. Suitable cases should be selected for litigation and the results would so establish, both the principle and the fee, that county authorities would hesitate to refuse payment. The same procedure should be adopted in suits for malpractice. The physician should be supported by the

committee, which at the earliest possible period should limit the time of bringing suit within a year. The same committee should prepare an act regulating expert testimony, along the lines in which such regulation is possible in the way already indicated. The legal status of medical claims being that of those of the artisan, it follows that the physician is entitled to the same lien.

PRESIDENT: The society is now ready for the regular order of business. First is the roll call.

Dr. WALL moved that the roll call be deferred until after dinner, when a larger number of members will be present. Motion carried.

PRESIDENT: Next is the reading of the minutes of the previous meeting.

On motion, the reading was dispensed with, it appearing that the entire minutes are printed in the bound volume in the hands of members.

Dr. G. A. WALL, Corresponding Secretary read his report. It is as follows:

TOPEKA, KAS., May 16, 1895.

*To the Members of the Kansas Medical Society:* I herewith beg leave to submit the following report: As per instructions from the Publishing Committee I asked for bids for printing 400 copies of the proceedings for 1894. Only two parties made a reasonable bid. These were Hall & O'Donald, of Topeka, and the *Kansas Medical Journal*. We at first supposed that 250 pages would fully cover the amount of reading matter, so bids were asked for on that basis. Hall & O'Donald bid \$323 and the *Kansas Medical Journal* \$325, or at the rate of \$1.30 per page. In view of the fact that the editor was a physician, we deemed it advisable to give him the printing, because technical terms were so frequent that we feared that unless the proof was carefully read many errors must certainly occur. As to the correctness of this deci-

sion; we leave it to the judgment of the members after a careful perusal of the proceedings. We found when we got ready to print them that they would run very much over the contract price, because the proceedings would contain many more pages. Fearing to incur too much expense; we concluded to print only papers that were read before the meeting, thereby keeping the volume down to 318 pages, for which we paid \$429 for printing; for mailing, wrapping; etc., \$30.20, making a total expense to the Society of \$459.20, or an average of \$1.15 per copy delivered to the members. To pay the debt incurred in printing we found it necessary to borrow \$225, which, added to the amount in the hands of the treasurer, made the payment complete. This loan was made by the Merchants' National Bank, of Topeka, who holds the note of Dr. Purdue and myself for the amount. This sum for publication may seem large at first glance for each year, yet when we come to compare the proceedings of the past two years with those two volumes which cover the period from 1860 to 1888, inclusive, we find that it requires as large a volume now for one year as it did then for five. Dr. C. H. Guibor, who was closely identified with the Society in those years, tells me that at one time it was found necessary to make an assessment of \$2 to pay for the publication. There is no compact volume of the proceedings from the year 1888-1893, and I would suggest that a committee be appointed to compile them and embody them in the proceedings for the coming year. For some reason there was no available funds with which to print them. If the Society desires to keep up with the procession and have the transactions published yearly, some changes must be made in the by-laws to increase our funds. At present the dues of the Society are too small to continue our yearly publications.

Now a few words as to the price paid the stenographer: We paid last year \$100 for his services, which may seem large, but when you take into consideration that in for.

mer years we paid the secretary \$50 for his services but now he receives nothing, you will see that in reality the society is only paying fifty dollars a year for a full report of the transactions, and to do so a stenographer is absolutely necessary. I am sure that our last year's proceedings compared favorably with the reports of many of our Eastern brothers, and was far better than many we have received and have cost more money. The Society owes Dr. McVey many thanks for the prompt manner with which these proceedings were gotten out: they were ready for distribution by August 15, 1894, which was many weeks before any other society had issued any.

As per resolution I forwarded to Dr. W. B. Atkinson, Secretary of the American Medical Association, a copy of the resolution adopted by the Society last year recommending a modification of the Code. This resolution is found on page 63 of the transactions of 1894.

During the year many inquiries and requests were made for exchange copies of our proceedings; these requests were complied with in all instances, as it was deemed advisable by the Secretary that Kansas and the profession of Kansas should be kept where they rightfully belong, at the head of the procession.

Following is a list of exchanges sent out:

- Dr. E. S. Elder, Indianapolis, Ind.
- Dr. R. S. Thompson, Spokane, Wash.
- Dr. D. H. Howell, Atlanta, Ga.
- Dr. Fred. C. Curtis, Albany, N. Y.
- Dr. L. A. Merriam, Omaha, Neb.
- Dr. H. A. West, Galveston, Tex.
- Dr. C. F. Wainwright, Kansas City, Mo.
- Dr. L. B. Godfrey, Camden, N. J.
- Dr. C. S. Chase, Waterloo, Ia.
- Dr. J. D. Fernandez, Jacksonville, Fla.
- Dr. A. A. Lobengier, Denver, Colo.
- Dr. J. H. Browne, New York Academy of Medicine.
- Dr. C. L. Sweet, Boise, Idaho.

Librarian, Washington, D. C.

Stormont Library, Topeka, Kas.

State Historical Society, Topeka, Kas.

Dr. Jas. T. Smith, Baltimore, Md.

Dr. J. R. Jordan, Montgomery, Ala.

Dr. W. B. Atkinson, Philadelphia, Pa.

Dr. Reuben Peterson, Grand Rapids, Mich.

Charlotte Medical Journal, Charlotte, N. C.

Dr. John W. Kyger, Kansas City Academy of Medicine.

Dr. Henry B. Artz, Milwaukee Medical Society, Milwaukee, Wis.

Dr. Geo. D. Hersey, Providence, R. I.

During the early Winter months I addressed to the various secretaries of the local societies letters asking them for a list of members. My object was to find out how many of their members were not members of the State Society, and thus write them asking them to join the State organization. These letters were promptly answered with one exception, viz: the Central Branch, and its reply has as yet failed to reach me. On March 19 I mailed 500 preliminary announcements to the members of the local societies giving the dates of the 1895 meeting and asking them to become identified with us. I am pleased to say that many inquiries resulted from this announcement from physicians desiring to join the Society. On May 1, 1895, the program was mailed to members only.

Heretofore we have had no roll call systematically kept. That we may have a correct roll of attendance I have made a roll book in which the attendance from day to day may be correctly kept. In past years the roll has been called on the opening day and not thereafter; in that way many members who were in attendance did not get credit for the same.

There are now 300 active members and 29 honorary



members in the Society. During the year the following have died:

Dr. Reid Alexander, Topeka.

Dr. M. C. Farrar, Atchison.

Dr. B. F. Hepler, Fort Scott.

Dr. H. W. Morgan, Clay Center.

Dr. M. O'Brien, Topeka—Total, 5.

The following have withdrawn:

Dr. J. D. Justice, Quincy, Ill.

Dr. W. E. Shastid, Pittsfield, Ill.—Total, 2.

Regarding rates on the various railroads, I desire to say that the best I could do was a fare of one and one-third on the certificate plan, which specifies that one hundred paid fares must be in attendance by rail. I endeavored, through Mr. W. J. Black, A. G. P. T. A. of the A. T. & S. F. Railway, to get a rate without any restrictions, but was unsuccessful. Before any rates are gotten it will be necessary that I have 100 certificates to take to Rowley Bros., so that they may indorse them.

Very respectfully submitted,

G. A. WALL, M.D.,

*Corresponding Secretary.*

On motion, duly carried, the report was received and adopted.

The PRESIDENT: Next in order is the announcement of the Board of Censors.

The SECRETARY read the names of the Board appointed at the last meeting, as follows: Drs. Alexander, Blair, Jacobs, Felty, and Klippel.

By the PRESIDENT: In view of the death of the chairman, I will appoint Dr. Gardner, of Greenleaf, as chairman of the Board, and Dr. R. J. Morton as a member *pro tem* of the Board.

Upon motion of Dr. HOGEBOOM, duly carried, the President appointed Dr. C. A. McGuire, of Topeka, permanent chairman of the Stormont Library Committee.

The PRESIDENT called for the Auditing Committee, but no member responding, Drs. W. E. McVey, Bunn and Gray were appointed as Auditing Committee.

PRESIDENT: We will now have the report of the Stormont Library Committee.

Dr. McGUIRE, chairman of the Library Committee, made the following report:

*Mr. President*—There are several reasons why, in comparison with previous years, your committee can report but little progress: Chiefly, the death of our chairman, whose illness began shortly after last year's session, coupled with the prolonged sickness and death of our late State Librarian, and the fact that Dr. Alexander and Mr. Dennis have practically done all the work in the past and were familiar with the work and library in all its details; and again, the fact that the library is now quite complete and our duties being purely advisory, it will require great care to add only such publications as are worthy.

Since May 1, '94, 152 vols., at an expenditure of \$180.27, have been added, making a total of 2,046 volumes, 46 pamphlets, 18 charts, 1 manikin. There is now available as the accumulated proceeds of the original \$5,000 donation, the sum of \$1,541.62. The State Librarian, Mr. J. L. King, is both willing and anxious to receive our advice and suggestions in future purchases, and we are now in a condition, with ample funds, to keep this valuable collection fully abreast of the times.

C. A. McGUIRE,  
G. C. PURDUE.

The report was duly adopted.

Dr. GRAY offered the following resolution:

*Resolved*, That Article IV of the By-Laws be amended as follows.

Strike out all of section 1.

In section 2, after the word "be" in line 1, strike out the word "three" and insert the word "five."

In line 2, section 2, after the word "pay" strike out the word "one" and insert the word "two."

Original section 2 shall be section 1.

Original section 3 shall be section 2.

*Resolved, further, That the above resolution shall be understood to take effect from the beginning of the present session.*

On motion of Dr. SHELDON, duly carried, the resolution was referred to the Judicial Council.

Dr. WALL: The question of the deficit in our revenues now comes up. Dr. Purdue and myself have been able to borrow \$225. Some provision must be made for paying that, so in order to square this matter up this year, I move that an assessment of one dollar be levied on all members of the Society.

On motion of Dr. SHELDON, duly carried, the motion of Dr. Wall was laid on the table to await the report of the Judicial Council on the question of changing the By-Laws.

The Treasurer not being present, and members desiring to pay dues, the President appointed Dr. J. R. Fay Treasurer *pro tem.* to sign and issue receipts.

The Treasurer's report was presented, and is as follows:

HORTON, KAS., May 15, 1895.

RECEIPTS.

May 16, 1895, balance from previous year.....	\$167 75
Amount collected at Atchison meeting.....	252 00
Amount collected between sessions of 1894 and 1895.....	56 00
Total receipts.....	\$475 75

DISBURSEMENTS.

1894	
May 4, Stenographer for recording minutes.....	\$30 00
4, Recording Secretary for postage.....	30 00
4, Dr. W. R. Priest, for stationery, announcements and programs.....	68 48
26, C. H. Nettles, for arranging proceedings for publication.....	70 00
June 22, W. E. McVey, for printing.....	4 00

July 2, For postage for mailing notices and receipts.....	4 00
2, Stenographer for preparing notices of dues.....	1 50
9, For new ledger for members.....	4 50
Aug. 29, W. E. McVey, for printing transactions.....	200 00
Oct. 10, Stenographer for preparing notices of dues.....	2 00
10, W. E. McVey for stationery.....	12 00
10, For postage for mailing 110 notices and receipts.....	3 00
1895	
Jan. 18, Kansas Medical Journal for printing.....	42 00
Total.....	\$471 48
Balance due Society May 15, 1895.....	84 27

PRESIDENT: Call the Committee on Necrology.

The committee was called, but no member responded.

The PRESIDENT thereupon appointed Drs. G. A. Blair, J. E. Minney and J. N. Linley as such committee.

PRESIDENT: Call the Judicial Council. The Council was called, Drs. Lane, Gill and McGuire responding.

The President appointed to fill the vacancies Drs. Grubbs and Hogeboom.

PRESIDENT: Next in order is miscellaneous business.

There being nothing offered, and the hour of 12 o'clock having arrived, on motion the Society adjourned until 1:30 P. M.

#### AFTERNOON SESSION—1:30 O'CLOCK.

The Society convened pursuant to the adjournment, President Priest in the chair.

Dr. BLACK: We have with us Dr. J. B. Murphy, who has come here from Chicago for the purpose of giving us a paper; he is very anxious to return tonight, and I therefore move that 4 o'clock this afternoon be made a special order for Dr. Murphy's address. The motion prevailed.

Dr. LANE, chairman of the Judicial Council, reported back the resolution to change the by-laws and increase fees and dues in the Society, with the recommendation that it be adopted, with the understanding that it apply

to the present year. On motion the report prevailed.

Drs. GILL and SABINE offered the following resolution, which was adopted:

*Resolved*, That the Publishing Committee be requested to furnish the author of each paper proof of his article for correction, said proof to be returned to said Publishing Committee in ten days, and that each author be furnished reprints at cost.

PRESIDENT: The Secretary will call the roll.

The roll was called, the following members answering to their names:

Drs. Axtell, Ames, Black, Boone, Barnes, Beals, Cordier, Carson, Coldren, Daugherty, Furst, Fay, Fryer, Gill, Gray, Gibson, Gardiner, Grubbs, Greene, Glasscock, Gardner, Hogeboom, Klippel, Lindsay, Lewis, Longshore, Linley, Lane, Lowe, Minney, Mathis, Marner, Mulvane, Magee, Morton, McClintock, McGuire, McVey, W. E., McVey R. E., Osborn, Ochiltree, Purdue, Priest, Reynolds, Russell, Scott, Sheldon, Sabine, Storrs, Stewart, Taylor, Tenney, Traylor, Tefft, Todd, Wetherby, Ward, Wall, Wilson, Welsh, H. G., Welch, W. E.

General session adjourned.

General session resumed.

Dr. GARDNER, chairman of the Board of Censors, made the following report:

*Mr. President*: We have examined the applications of the following gentlemen and recommend that they be admitted to membership in the Society:

J. W. May, M.D., Kansas City, Kas.; a graduate in medicine at the Cincinnati College of Medicine and Surgery, 1875. Recommended by Drs. A. P. Tenney and W. S. Lindsay.

J. F. Costello, M.D., Howard, Elk county, Kas.; a graduate in medicine at Columbus Medical College, Col-

umbus, O., 1880. Recommended by Drs. J. R. Fay and Geo. W. Hogeboom.

J. G. Evans, M.D., Winfield, Cowley county, Kas.; a graduate in medicine at Ohio Medical College, 1881. Recommended by Drs. Geo. W. Hogeboom and J. R. Fay.

R. F. Harris, M.D., Marion, Kas.; a graduate in medicine at University of Michigan, 1867-8, Bellevue, 1868-9. Recommended by Drs. G. A. Wall and R. S. Magee.

J. W. Kretzmeier, M.D., a graduate of the Medical College of Ohio, 1887. Recommended by Drs. J. R. Scott and R. S. Magee.

W. W. Gill, Haddam, Kas.; a graduate in medicine at Northwestern College, St. Joseph, Mo., 1893. Recommended by Drs. H. M. Ochiltree and G. A. Wall.

James W. Janes, M.D., Columbus, Kas.; a graduate in medicine of the University of Tennessee, Medical Department, 1887. Recommended by Drs. J. E. Minney and G. A. Wall.

Russell A. Roberts, M.D., Kansas City, Kas.; a graduate in medicine at Medical College of Indiana, 1887. Recommended by Drs. A. P. Tenney and S. S. Glasscock.

D. Y. Graham, M.D., Nortonville, Kas.; a graduate in medicine at Rush Medical College, Chicago, 1890. Recommended by Drs. M. B. Ward and W. E. McVey.

Howard M. Cornell, M.D., Kansas City, Kas.; a graduate in medicine at Kansas City, Mo., 1892; recommended by Drs. Geo. M. Gray and J. E. Minney.

Geo. A. Boyd, M.D., Edgerton, Kas.; a graduate in medicine at Bellevue Hospital Medical College, New York. Recommended by Drs. A. H. Cordier and W. S. Lindsay.

S. H. Parks, M.D., Longton, Elk county, Kas.; a graduate in medicine at Rush Medical College, 1874. Recommended by J. R. Fay and G. A. Wall.

G. W. Hollembeak, M.D., Ingalls, Kas.; a graduate of Quincy College of Medicine, 1884. Recommended by Drs. G. A. Wall and J. R. Fay.

T. P. Polk, M.D., Augusta, Kas.; a graduate of medicine at University of Tennessee, 1877. Recommended by Drs. G. A. Wall and G. C. Purdue.

W. H. Smethers, Moline, Kas.; a graduate in medicine at Rush Medical College, 1881. Recommended by Drs. G. A. Wall and J. R. Fay.

J. H. McGauhey, M.D., White Cloud, Kas.; a graduate in medicine at Missouri Medical College, St. Louis, 1888. Recommended by Drs. G. A. Wall and W. M. Boone.

Geo. M. Seacat, M.D., Kinsley, Kas.; a graduate of medicine of Kentucky School of Medicine. Recommended by Drs. J. R. Fay and G. A. Wall.

W. C. Hali, M.D., Coffeyville, Kas.; a graduate of College of Physicians and Surgeons, Baltimore, Md., 1885. Recommended by Drs. A. P. Tenney and Geo. M. Gray.

M. M. Löttridge, M.D., Sylvia, Reno county, Kas.; a graduate of Kansas City Medical College, 1893. Recommended by Drs. W. R. Priest and B. J. Wetherby.

M. C. Boggs, M.D., Coolidge, Kas.; a graduate in medicine at Chicago Medical College, 1876. Recommended by Drs. Andrew Sabine and J. R. Fay.

F. L. Rownd, M.D., Dighton, Kas., a graduate of Rush Medical College, 1874. Recommended by Drs. G. A. Wall and J. R. Fay.

G. D. Bennett, M.D., Newton, Kas.; a graduate of University of Pennsylvania, 1879. Recommended by Drs. J. R. Fay and G. A. Wall.

J. C. Egelston, M.D., Topeka; a graduate in medicine at University Medical College, Kansas City, 1893. Recommended by Drs. G. A. Wall and J. R. Fay.

H. H. Wells, M.D., Coffeyville, Kas.; a graduate in medicine at Georgetown, University, Washington, D. C., 1869. Recommended by Drs. A. P. Tenney and Geo. M. Gray.

S. H. Sidlinger, M.D., Hutchinson, Kas.; a graduate

in medicine at University of Michigan, 1874. Recommended by Drs. C. Klippel and B. J. Wetherby.

S. M. Colladay, M.D., Hutchinson, Kas.; a graduate in medicine at University of Michigan, 1873. Recommended by Drs. C. Klippel and B. J. Wetherby.

Vladimir F. deNiedman, M.D., Pittsburg, Kas.; a graduate in medicine at University of Dorpat, Russia, and Howard University, 1887. Recommended by Drs. H. Z. Gill and W. E. Welch.

E. L. Harrison, M.D., Kansas City, Kas.; a graduate in medicine at Kansas City University Medical College, 1892. Recommended by Drs. A. P. Tenney and V. L. Todd.

Upon motion duly seconded and carried, the Secretary was instructed to cast the unanimous vote of the Society for the applicants, which was accordingly done, and the gentlemen declared elected members of the Society.

Here the Society arose and adjourned until 9 A. M., Friday, May 17, 1895.

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#### MORNING SESSION—FRIDAY, MAY 17, 9 O'CLOCK.

The Society convened pursuant to the adjournment, President Priest in the chair.

The Board of Censors made the following report:

*Mr. President*—The Board of Censors have considered the following applications, and recommend that the applicants be admitted to membership in the Society:

Noah Hayes, M.D., Seneca, Kas.; a graduate in medicine of Georgetown University, Washington, D. C., 1876. Recommended by Drs. S. E. Sheldon and J. C. McClintock.

Edwin W. Eldridge, M.D., Alta Vista, Kas.; a graduate in medicine at Cincinnati College of Medicine and Surgery, 1879. Recommended by Drs. J. C. McClintock and G. A. Wall.

B. F. Herring, M.D., Sabetha, Kas.; a graduate of



Ensworth Medical College of St. Joseph, Mo. Recommended by Drs. L. Reynolds and M. N. Gardner.

Geo. W. Akers, M.D., Stafford, Kas.; a graduate of the College of Physicians and Surgeons, Indianapolis, 1875. Recommended by Drs. J. T. Axtell and C. Klippel.

J. B. Pierce, M.D., Eureka, Kas.; a graduate of St. Louis Medical College, 1877. Recommend by Drs. C. A. Wakefield and L. J. Cunkle.

William B. Mead, Oberlin, Kas.; a graduate of Rush Medical College, 1872. Recommended by Drs. G. A. Wall and G. P. Marner.

Upon motion duly carried, the secretary was instructed to cast the unanimous ballot of the Society for the applicants; which was accordingly done, and the gentlemen named were duly admitted to membership in the Society.

The Medical Section resumed its session.

The Medical Section having completed its program, adjourned. The general session was resumed.

The PRESIDENT called for the report of the Committee on Necrology. Dr. Linley, chairman, made the following report:

*Mr. President*—Your Committee on Necrology beg leave to submit the following report:

The following members died during the year:

Dr. R. Alexander, of Topeka.

Dr. M. O'Brien, of Topeka.

Dr. M. Farrar, of Atchison.

Dr. B. F. Hepler, of Ft. Scott.

Dr. H. W. Morgan, of Clay Center.

Dr. W. T. Thomas, of Leavenworth.

J. M. LINLEY, *Chairman*.

Dr. WALL offered the following resolution:

*Resolved*, That all papers read before this Society hereafter be limited to twenty minutes.

The resolution was adopted.

Dr. W. B. MEAD offered the following resolution, which was unanimously adopted:

*Resolved*, That it is the sense of the Kansas Medical Society, in regular session assembled, that a National Health Department be created with the power and dignity of a Cabinet office; that the safety and health of the people is of supreme importance, and the establishment of such a department is demanded by nineteenth century progress.

The following resolution was adopted:

*Resolved*, That the Corresponding Secretary be and is hereby invested with exclusive power to incur and pay bills on behalf of the Society. Carried.

Dr. GARDNER, chairman of the Board of Censors, made the following report:

*Mr. President*—The Board of Censors have considered applications of the following named gentlemen, and recommend that they be admitted to membership in the Society.

Andrew W. Davis, M.D., Holton, Kas.; a graduate in Medicine at Northwestern University, 1893. Recommended by Drs. W. W. Gill and L. Reynolds.

B. Sanford Stewart, M.D., Netawaka, Kas.; a graduate in medicine at Northwestern Medical College, St. Joseph, 1893. Recommended by L. Reynolds and W. W. Gill.

J. L. B. Eager, M.D., Kansas City,; a graduate in medicine at Kansas City, Mo.; 1884. Recommended by Drs. A. P. Tenney and V. L. Todd.

Eugene Scheidt, M.D., Topeka; a graduate in medicine in Germany and at Northwestern Medical College, 1891. Recommended by Drs. G. A. Wall and G. C. Beals.

H. H. McLellan, M.D., St. Marys, Kas.; a graduate in medicine at Ohio Medical College, Cincinnati, 1880. Recommended by L. Y. Grubbs and G. A. Wall.

Harold L. Gould, M.D., Medicine Lodge, Kas.; a graduate in medicine at Fort Wayne, Ind., 1895. Recommended by Drs. J. R. Fay and G. C. Purdue.

F. P. Dunn, M.D., Ellinwood, Kas.; a graduate in medicine at College of Physicians and Surgeons, Baltimore, Md., 1876. Recommended by Drs. G. A. Wall and S. J. Shaw.

H. H. Sutherland, M.D., Herington, Kas.; a graduate in medicine at Iowa State University, 1885. Recommended by Drs. L. Reynolds and G. A. Wall.

Samuel W. Williston, M.D., Lawrence, Kas.; a graduate in medicine at Medical Department, Yale University, 1890. Recommended by Drs. W. S. Lindsay and J. E. Minney.

Mary V. Church, M.D., Topeka.; a graduate in medicine at Kansas Medical College, 1894, Recommended by Drs. S. G. Stewart and J. R. Fay.

George F. Johnston, M.D., Leoti, Kas.; a graduate in medicine at Jefferson Medical College, 1887. Recommended by Drs. J. R. Fay and J. F. Bond.

M. B. Titterington, M.D., Burrton, Kas.; a graduate of Keokuk College, 1892. Recommended by Drs. J. T. Ax-tell and B. J. Wetherby.

Upon motion, duly carried, the Secretary was instructed to cast the unanimous vote of the Society for the applicants, which was accordingly done, and they were declared duly elected.

PRESIDENT: We have a long program, and it will be necessary to hold two sections simultaneously. The Section on Ophthalmology has secured a hall at 723 Kansas avenue and will hold its sessions there, but I think it will be well for the chairman to read his paper here.

Dr. GILL, chairman, read the following paper. (See Section on Ophthalmology and Rhinology.)

Here, the Society arose and adjourned until 1:30 P.M.

## AFTERNOON SESSION—1:30 o'clock.

Dr. M. B. WARD offered the following resolution:

*Resolved*, That all members of the Society who, by reason of age or infirmity, shall become permanently unable to attend the sessions, be placed on the roll as honorary members.

The resolution was unanimously adopted.

The resolution offered last year, proposing to amend the constitution, in respect to the place of meeting, was called and adopted.

*Resolved*, That Article V of the Constitution of this Society be amended by striking out the words, "at such time and place from year to year as the Society may elect," and inserting the words, "in the city of Topeka, Kas."

F. C. HERR,  
R. S. BLACK."

Atchison, Kas., May 4, 1894."

The resolution was adopted.

Dr. J. A. LANE, chairman of the Judicial Council, presented the following report:

"We recommend that Dr. F. E. Grant, of Ottawa, Kas., be suspended for one year, and if, after due notice by the Secretary of the Society, he does not clear himself of the charges before us, that he be expelled.

Also, that the Secretary be instructed not to allow Dr. W. F. Richardson, of Havensville, Kas., to sign the constitution and by-laws until he satisfies us concerning the charges against him, and that the Society rescind its action of last year in admitting him.

Also, in the case of Geo. N. Lowe, of Randall, Kas., we recommend that he be suspended for one year, and if, after due notice by the Secretary, at the expiration of one year, he does not prove himself innocent of the charges preferred against him, that he be expelled.

Information having come to us of certain irregularities among our members; therefore, be it

*Resolved*, That any physician practicing a specialty under the title of "— Company," or "— cure," or vaunting special or secret methods, and soliciting patients through the means of printed announcements, or private personal appeals for patronage, is hereby censured by this body. The above is intended to apply to such companies as the "Kansas Rupture Cure Company" and is intended both as a reprimand, and a caution to those inclined to ethical quackery.

J. A. LANE, *Chairman*.

H. Z. GILL,

D. F. LONGENECKER,

L. Y. GRUBBS,

C. A. MCGUIRE."

The report was read and adopted, section by section.

Dr. GEORGE W. HOGEBROOM offered the following resolution:

*Resolved*, That the secretary of this Society be and he is hereby instructed to send to each member of the Society who is delinquent in dues a statement of the same, with a notice thereon that if the amount is not paid into the treasury on or before the 30th day of June, 1895, that his name will be dropped from the list of members in the published proceedings of this Society for the current year.

Dr. McVEY, chairman of the Auditing Committee, made the following report:

We, your Auditing Committee, beg to submit the following report:

We have audited the Treasurer's books and found that there was on hand, May 3, 1894.....	\$167 75
Collected during the year.....	308 00
Total.....	<u>\$475 75</u>

Expended during the year, as per Treasurer's report.....	\$471 48
Leaving cash on hand.....	\$4 27
Due Treasurer from Corresponding Secretary for dues collected.....	7 00
Total .....	<u>\$11 27</u>

We recommend the payment of the following unpaid bills:

Corresponding Secretary, Dr. Wall.....	\$26 00
Kansas Medical Journal.....	32 80
Wichita Eagle.....	5 00
Merchants' National Bank, note.....	225 00
O'Connell & Woodhouse.....	1 75
Total .....	<u>\$292 55</u>

W. E. McVEY,  
W. S. BUNN,  
GEO. M. GRAY,  
*Committee.*

On motion the report was unanimously adopted.

PRESIDENT: We will now have the report of the Nominating Committee.

Dr. J. A. LANE, chairman of the Committee, made the following report:

For President, R. S. Black, M.D., Ottawa, Kas.

For First Vice-President, M. N. Gardner, M.D., of Greenleaf.

For Second Vice-President, Andrew Sabine, M.D., of Garden City.

For Corresponding Secretary, G. A. Wall, M.D., of Topeka.

For Treasurer, L. Reynolds, M.D., of Horton.

For member of Judicial Council, W. H. Mathis, M.D., Waverly, Kas.

On motion duly carried, the Secretary was instructed to cast the unanimous vote of the Society for the nominees, which was accordingly done and the nominees declared elected.

The PRESIDENT announced the following committees for 1896:

Necrology—Drs. J. A. Lane, C. Klippel, and G. W. Hogeboom.

Committee on Arrangements—Drs. J. P. Lewis, G. A. Wall, S. E. Sheldon, J. E. Minney, and Ida C. Barnes.

Board of Censors—Drs. L. H. Munn, A. B. Peters, and George M. Gray.

PRESIDENT: I desire to express to you my sincere and heartfelt thanks for the honor you have conferred upon me in electing me to this position and also for the kindness and consideration which you have evinced towards me during the tenure of my office. Especially, do I thank the officers of the sections for valuable assistance in preparing the program. We should all feel grateful for the pleasant and profitable meeting we have had, and also to the citizens of this hospitable city for the warmth and cordialty of their welcome. I now turn the gavel over to my successor and trust that he will wield it with as much satisfaction as I have done. I now introduce to you your new President, Dr. Black.

Dr. BLACK: I hardly know how to thank this Society for the splendid honor it has conferred upon me by electing to the highest office within its gift. As I look into your earnest and thoughtful faces, and reflect what this Society stands for, I realize that it is a position of gravity and responsibility, and with this realization of the duties I am called on to perform, I shall try as best I may, to cherish and advance the best interests of the Society, and of the cause of medicine everywhere. Again, I thank you. I do now declare this meeting adjourned *sine die*.





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## GENERAL MEDICINE.

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A. P. TENNEY, M.D.,  
*President.*

S. G. STEWART, M.D.,  
*Secretary.*

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## GENERAL MEDICINE.

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There being no further business before the general session, the Section on the Practice of Medicine and Electro-Therapeutics was taken up, with Chairman Tenney in the chair.

An election of officers of the Section for the ensuing year was first held, resulting in the election of Dr. S. S. Glasscock, of Kansas City, as Chairman, and Dr. D. D. Wilson, of Nortonville, as Secretary.

Chairman TENNEY delivered the following address:

### REFERENCES TO MEDICAL PROGRESS.

The Scandinavians, after having colonized Iceland in 875 and Greenland in 983, came down to the coast of what is now New England in the year 1000. It was 492 years after this when Columbus cast his longing eyes upon our land. Between 460 and 357 years before the time of Christ, Hippocrates, the seventeenth or nineteenth in descent from Esculapius, touched upon the almost unknown shores of medical knowledge. The principles of medicine taught by him at that time stood unchallenged nearly five hundred years, when Galen, the Columbus of his time, became the almost universally acknowledged authority until near the sixteenth century. It was then, you are aware, that Dutch, Portuguese, French and English vessels were exploring our Atlantic coast, the river St. Lawrence and the Gulf of Mexico. The works of Hippocrates and Galen, and those of Aristotle, had been translated into Arabic. The first elements of pharma-

ceutical chemistry, a knowledge of how to obtain metallic oxides and salts, had been made known, Cassia, camphor, rhubarb and senna had been prescribed in the ninth century. Syphilis was first recognized in Italy in the sixteenth century.

Although Mondini had publicly dissected two human bodies in Rome in 1315, it was in the sixteenth century, under the teaching of Vesalius, that the study of anatomy was fully established. Physiology, chemistry and diseases began to be better understood, though, as it seems to us now, as little comparatively was known of the science of medicine then as of our continent at that time by the sailors along our eastern coast.

During the fifteenth and sixteenth centuries Davis, Baffin, Lancaster and Hudson wrote their names on the map of America, while Eustachius, Fallopius, Malpighi, Sylvius and Wills were carving their names within the human clay.

From this time forward the steps in medical progress came nearer together, the marching columns were greater in number, and although, as in the history of our country, there were pirates and pilgrims, Indian wars, revolutions and conquests, there were noble, hard-working men who spent their lives delving in uncertainty for advancement in medicine, with few of the aids which help the student of the present. The name and works of Sydenham, the greatest physician of the seventeenth century, also Boerhaave, the first physician of the eighteenth century, of Haller, Cullen, Monro, Blanc and the Hunters are familiar to you. By such men the wide world of medicine began to be measured, its fields surveyed, a few stakes driven for its settlement and cultivation.

Within the last century Jenner discovered vaccination as a prevention of smallpox. Bright and Addison revealed the secrets of kidney disease. The character, cause and remedies of disease became better understood.

In *materia medica*, quinia, morphia, strychnia, the iodides and bromides, chloroform and ether came into use. The stethoscope, the ophthalmoscope, laryngoscope and speculum barely preceded the present age. The compound microscope, first made in 1590, was not perfected for many years, yet with its development has been our progress in the knowledge of disease. Carbolic acid, Lister's antiseptic methods and the germ theory have found recognition within our memory.

In the thirty years following our civil war, the United States has received the most rapid development and greatest growth. So it seems to us, the most active and decided progress in the science of medicine has been made in the past thirty years. It is not important that I should name the many men who have been prominent leaders in bearing forward to a higher standard, the knowledge and usefulness of our profession. They have become authority and are familiar to all students of medicine who follow after them. The swift spirit of emulation seems to urge us onward day by day. In culture, in opportunity for breadth of knowledge, in accumulation of suggestions and experience no age has exceeded the present.

The multiplication of medical schools until they have become common schools is only an illustration of the increased interest among the people in obtaining a knowledge of medicine as among members of the profession who use the schools to perfect themselves, as well as to help the beginners. The schools giving greater scope and activity to all minds coming in contact with them, the rivalry engendered by them tending to better effort and result. The schools must continue to increase facilities for successful study, especially in chemistry and laboratory work, for it is in the laboratory that the best work is done. What better illustration of this than the great number of new medical preparations, especially the coal oil derivatives. What better evidence of the wonderful growth and results of investigation than the nam-

ing and describing, at last accounts, of near five hundred and fifty bacteria and fungi, as also of more than one hundred diseases that are produced by bacteria.

The progress of the world in medicine, which began with long, slow tread over the centuries in most uncertain illumination has become the tramp, tramp, tramp of an army with brilliant lights and a moderate disposition to banners. Yet the coal oil products are still under investigation, and the paths of the microbe and bacillus are still in a measure mysterious, and we may find in our own midst men to take the place of such workers as Leibig, Pfeiffer, Pasteur, Emmerich, Koch and many others who could be named. Progress to us, as every-day practitioners, means added strength and ability to carry out the great work covering the field of our profession; progress in cultivation, increase in mental, moral and social worth are helps to guard public sanitation. The health of families intrusted to our care, to correct physical and mental defects and deformities, administer to disease, usher with delicate and antiseptic care the advent of new lives, soften and ease the pangs of the dying hour, comfort and encourage the bereaved and sorrowing. To do all this and keep to the front there is no time for sleep, for with a few days absence from work, without our journals, our samples of new remedies and record of new discoveries, we may be left in the background.

S. S. GLASSCOCK, M.D., read the following paper on

#### HEART DISEASE AMONG SOLDIERS.

I propose in this paper to briefly consider the causes that produce among soldiers so large a per cent. of abnormal hearts. From soldiers examined by our board at Kansas City, Kas., I have selected 300 cases, taking them in the order in which they were examined, I find 57 cases of valvular lesions, many of these were, or had been, rheumatic cases, and doubtless were primarily valvular

defects and could be accounted for in the ordinary way. Of these, 33 were mitral, 18 tricuspid, and 6 were aortic, 98 were enlarged without any valvular lesions that could be detected. It is to these 98 cases that I desire to call attention. In these cases there was an increase of the area of cardiac dulness, more pronounced to the right. In most of the cases the apex impulse was to the right of normal, in some cases in the median line. In many cases the first sound was slightly prolonged, otherwise the sounds were normal. Many of these soldiers seem to be in a good physical condition, but on examination we find the following condition: pulse 90 to 140, apex impulse seen and felt to the right of the normal, in many cases in the median line area of cardiac dulness extended usually more marked to the right, dyspnoea was present to a greater or less extent in all the cases; in some of the cases it was slight, in others it was pronounced, cyanosis was present in most of the cases. Œdema, while present in some cases, as a rule, was absent. In many of the cases the superficial vessels, especially over the stomach, were dilated until they appeared as dark blue lines. In some of these cases dilatation was poorly compensated by hypertrophy as evidenced by weak pulse and diminished heart force, when the increased area of cardiac dulness was decided. Thus soldiers represented to the board that they were unable to work on account of the condition of their hearts, and over exertion soon exhausted them and caused the heart to palpitate and in many cases caused severe cardiac pain. I have personally observed some of these cases about their daily avocations and find their allegations to be true, ascending a stairway will produce the disturbance above referred to. The causes of these enlarged hearts are numerous, among the causes of irritable hearts as described by DaCosta, as being prevalent during our late civil war is doubtless a fruitful source of hypertrophy. In these cases the pulse ranged from 100 to 140. The continued over-work-

ing of the heart in this way would tend to hypertrophy. Attempting to return to service after continued fevers before recovery was complete would favor dilatation because of the low vitality of heart muscles. Diarrhea, so prevalent in army service, so reduces the vital force as to make it difficult for the heart muscles to do their work properly. Fear or anxiety, that must of necessity be present to a greater or less extent, is another probable source of enlargement of the heart. Excitement of any kind is known to increase the pulse rate. Of all the causes of enlargement of the heart among soldiers over exertion is of the most importance. The wind-broken horse is a good example of a dilated heart from over exertion carried to the point of extreme exhaustion. The fact that this condition is found among horses that have indiscreet masters and as a rule not among race horses shows that the state of extreme exhaustion must be reached before dilatation is likely to occur. The large heart of the athlete is another example of what over-exertion may do. We find, or may find accute dilatation from over-exertion in climbing a steep mountain. If the heart be examined during the ascent it will be found to have an over distended right ventricle with increased dulness to the right and with the apex impulse to the the right of normal. Soldiers exhausted from fevers, diarrhea, improper food, and want of shelter, are easily exhausted by long forced marches. These long forced marches while the vital force is low, is likely to over distend the right side of the heart and by continuing to do so, notwithstanding the safety power of the tricuspid valve, is likely at least, in a large per cent. of the cases to be the beginning of dilatation of the right ventricle. In a large per cent. of those cases nature comes to the rescue by increasing the thickness of the heart walls. No doubt there were cases in which the compensatory hypertrophy did not occur. For obvious reasons these cases were not seen by our board. During



the past three years I have treated a number of these cases where the compensatory hypertrophy failed to longer remedy the defect and uncontrollable œdema was followed by death. Irritable hearts, as described by DaCosta, were not confined to armies in active service, but were present among soldiers in training as well. The conclusions to which we came would be that diarrhea, continued fevers, improper food and shelter, anxiety and other causes that tend to lower the vitality followed by long forced marches favors dilatation of the right side of the heart and the soldier's life is prolonged by the compensatory hypertrophy.

#### DISCUSSION.

Dr. R. E. McVey, Topeka: I am very much interested in the subject of heart troubles, and I think the doctor has treated the subject very well. I thought, though, that hypertrophy usually began in the left ventricle and that the right ventricle became involved afterwards. I don't know that his statement is quite correct. Such has not been my experience, at any rate, in heart troubles. I believe that is all I want to say on the subject.

Dr. GLASSCOCK closed the discussion: The only thing I wish to say in answer to the gentleman's question is that hypertrophy undoubtedly begins on the left side, where it is the result of valvular lesions, but in these cases we found no valvular lesion, and the greatly distended condition of the heart on the right side made it clear that the dilatation began there and not on the other side.

MAGGIE L. MCCREA, M.D., Winchester, read a paper on

#### CRETINISM.

*Mr. President and Members of the Society*—The older textbooks have very little to say of the functions of the thyroid gland, its diseases and their treatment.

Recently a great deal has been said about it, particularly of myxœdema, its pathology and treatment.

Myxœdema is, by some writers, considered as resulting simply from an atrophied condition of the thyroid.

I believe it is caused by loss of functional activity of the gland, whether due to atrophy or hypertrophy. Cretinism is recognized as one form of myxœdema. While the endemic form exists only in the Alpine and a few other mountainous regions, we may find sporadic cases in any locality.

I have had one case in my own practice, which I treated with thyroid extract. While not giving the marvelous results sometimes reported, the improvement has been very pronounced. E. W. came to my office April 4, 1894, requesting me to extract a deciduous tooth, which was quite loose. She was 17 years and 10 months old, height 49 inches, weight 67 pounds. The skin was normal in appearance; otherwise the child presented most of the characteristic symptoms of cretinism. There was an œdematous appearance of the face, mostly about the eyes. The lips were large. There had been hare lip, which had been operated upon not very successfully. The thyroid gland was slightly enlarged, the left lobe being the larger.

Peculiar waddling gait, walked with great difficulty, and would frequently fall. Her parents believed her difficulty in locomotion to be due to an injury to left ankle which she received when she was 7 months old. Lordosis of spine and protuberant abdomen were very noticeable. The temperature was below normal, 97° to 97.5°, and pulse rapid. Mental condition below normal. She was usually very quiet and tractable, though she had occasionally manifested some temper.

She was not inclined to any active exercise. She seemed to enjoy making calls occasionally, and was usually taken in a baby carriage, unless the distance was

very short. She usually did very little talking when she did make calls.

Her appetite was very slight, her breakfast frequently not being more than half a gill in quantity, and other meals in proportion. Her digestion was very poor. I did not attempt any special line of treatment until after the meeting of the State Society in Atchison. After listening to the paper on myxoedema, and the discussion which followed, I considered the advisability of thyroid feeding in this case. The case seemed so hopeless, however, that I did not make any such suggestion to the parents until, meeting Dr. Lindsay in a consultation, I told him of the paper read in Atchison and of this case. He advised me to try the thyroid feeding, May 12 I began the use of the extract, using Parke, Davis desiccated thyroid extract, gr. ij, three times a week. Patient became quite nervous, restless at night, weak, pulse rapid, as high as 132, and some temperature.

May 24 Dr. Lindsay was consulted. He advised a continuance of the remedy in smaller doses less frequently given, and dose lessened to gr. j twice a week.

Her appetite increased until she wanted three meals a day, and sometimes a lunch besides, frequently eating more each time than formerly she would eat in an entire day. Her general health improved in proportion to the increased appetite. She became much more active, would play with other children and try to climb fences and run races. She also developed a remarkable degree of willfulness, and her temper was a matter of amazement to her mother. She lost in flesh, the oedematous condition gradually disappearing; became much more erect, and her waddling gait became much less apparent. The lardosis is very much lessened. She has grown five inches in height. The enlargement of thyroid disappeared. One morning in November she informed her mother that she was going to dress herself and go to Sunday school alone, two things which she had never attempted to do.

She went to her room and really did dress herself, but was unable to fasten her dress, as it buttoned down the back like most children's dresses do. She finally condescended to ask her mother to fasten it. She then put on her hat and veil and went to and returned from Sunday school alone, a distance of about a block. She is more observant of everything than formerly, and expresses her opinions as any other child would do. She has developed a great deal of very active individuality. The family history is negative. This patient is the only child. I have no theory to offer as to the cause of this condition.

#### DISCUSSION.

Dr. STEWART: I couldn't hear very well, and the remark which I wish to make may be in the paper. The disease of cretinism, I believe is thought to be caused by a lack of the thyroid gland or a loss of function of the gland. I have read somewhere that both myxœdema and cretinism are supposed to be due to loss of function of this gland, and in some investigations in twenty or thirty cases it was found on examination that there was an almost entire loss of the gland, and, in some of the cases, a tuberculous condition of the gland.

Dr. LINDSAY: I am not prepared to present anything of value on the subject of this paper, as I did not expect to take part in the discussion. I have, however, used the thyroid extract to some extent, and I believe that in these cases of cretinism many times, the imperfect development of children is due to loss of function of the thyroid gland. I have seen one case of myxœdema recover under the use of the extract. So far as actual proof of the *modus operandi* of this remedy is concerned, I have nothing new to offer at all. But the marvelous results which we have had in cases of myxœdema prove that this is the true remedy.

Dr. MCCREA: I agree with Dr. Stewart that this condition is caused by loss of function of the thyroid gland,

but I have not found any reason for this condition—why the thyroid should be either atrophied or hypertrophied; in this case there was some hypertrophy. I have nothing else to say.

Dr. R. E. McVey, read the following paper on

#### HOLMES' MEDICINE AND CRIME.

"I firmly believe that if the whole materia medica as now used could be sunk to the bottom of the sea, it would be better for mankind and all the worse for the fishes."

Doctor Holmes while pursuing his medical studies in Paris under the teaching of Louis, became prejudiced against what Louis termed the Drugging System of medicines. Louis was a thorough diagnostician, using but little medicine in his treatment of disease, relying principally upon nature for the cure.

In England there has long existed two classes of physicians. One class are recognized as druggists, who make money by prescribing their medicines not in the interest of their patients, but to build up their trade. This same kind of drugging trade was brought over to this country from England and is still being carried on.

In England the better class of physicians have been *undermined* by this drugging system. The profession in this country is being *undermined* in the same way. The profession is burdened with various and unnecessary drugs now being manufactured by manufacturing chemists.

It is not the duty of the profession to furnish a market for the whole output of drugs known as foods and medicines in the interests of manufacturing chemists and druggists. But it is true that we are indebted to the manufacturing chemists for the present refinement of the medicines now on the market, and we appreciate the scientific work done by them.

The public is very intelligent about everything but

medicine. In medicine it is hopelessly ignorant and never finds it out and is easily imposed upon. It is the public who is buying all the patent medicines and building up the toad-stool millionaires.

In order to protect the profession from its burden of worthless foods and medicines, and the public from unnecessary drug taking, it would be better for the whole lot to be cast into the sea and begin over again.

Doctor Holmes said: "I will venture to say this, that if every specific were to fail utterly; if the cinchona trees all died out and the arsenic mines were exhausted, and the sulphur regions were burned up; if every drug from the vegetable, animal and mineral kingdom were to disappear from the market, a body of enlightened men organized as a distinct profession would be recognized just as much as now, and respected and trusted as now; whose province would be to guard against the cause of disease; to eliminate them if possible; when still present to order all the conditions of the patient so as to favor the efforts of the system to right itself, and to give those predictions of the course of the disease which only experience can warrant, and which in so many cases relieve the exaggerated fears of sufferers and their friends, or warn them in season of impending danger. Great as the loss would be if certain active remedies would no longer be obtained, it would leave the medical profession the most essential part of its duties, and all and more than all its present share of honors, for it would be the death blow to charlatanism, which depends for success almost entirely upon drugs."

It has long been the policy of educated physicians to give but little medicine in mental disturbances. Macbeth says to his physician: "Canst thou minister to a mind diseased; pluck from the memory a rooted sorrow; raze out the written troubles of the brain, and with some sweet oblivious antidote cleanse the stuffed bosom of that perilous stuff which weighs upon the heart?" The phy-

sician answers: "Therein the patient must minister to himself."

We are a Fourth of July people, an impatient people; we are unwilling to wait for the system to right itself in disease. The impatience forces the physician to give an unnecessary amount of drugs without waiting to see what nature would do if it were left to itself. As physicians grow older and have more experience they use less medicine and trust more to nature in the cure of not only mental diseases, but all other forms of disease. Under the germ theory of disease, in the future medical science and sanitary science will go hand in hand, but the sanitary physician will be in the popular current.

The time is not far distant when drugs will be only a secondary matter and new discoveries will come and are now coming which will combat the element which produces diseases and for which drugs are now used as palliatives.

Unquestionably disease is the result of nature's inability to combat foreign invasion, and where this element of nature can be fortified we are in a fair way to secure the control of diseases.

Late researches have demonstrated that the white blood corpuscles perform the function of immunization. The properties of the white blood corpuscles are now under experimentation and we can soon expect to hear of their definite functions. They have long since been recognized as the soldiers which meet the enemy in battle.

Dr. Holmes, with his long experience as an anatomist and physiologist, recognized the fact that alterations in tissues from diseases are not corrected by medical art, but by the resources of the system.

The reaction from disease depends upon the quality and character of tissues involved. Chronic invalidism is the normal condition of many persons because of a low vital condition.

When the fixed tissue cells are feeble in function, they

fail to assimilate sufficient nutriment for long continued evolution, and such persons are continually dropping out of the ranks in spite of all the medicines in the *materia medica*.

We all come in contact with a class of chronic ailments where there seems to be an impoverished condition of nervous tissue, where the system is as sensitive to external influences as the barometer is to the changes of temperature.

In speaking of a woman's nervous headache, he says: "Sometimes it is as if Jael were driving the nail that killed Siscerra into her temple; sometimes letting her work with half of her brain, while the other half throbs as if it would go to pieces, and then her neuralgia, and her headache, and her fits of depression, in which she thinks she is nothing and less than nothing; and these paroxysms which men speak of so slightly—so many trials which belong to her fine and mobile structure." He knew what a nervous woman was and how to manage her. He could tell at a glance when she was in that condition of unstable equilibrium in which a rough word is like a blow to her, and the touch of unmagnetized fingers reverse all her nervous currents.

There is no medicine that will raise such a patient above her normal condition of invalidism. If Dr. Holmes was at one extreme in giving too little medicine, I feel that often we are at the other in giving too much.

Chronic invalidism and crime are different manifestations of feeble cell action of the tissues. There may be a great abundance of food, but if there is poor assimilation, the tissues are starved. There is an ocean of light, but if the cells of the retina are inactive the man is blind; just so, there is an ocean of intelligence, but if there is feeble action in the corticle cells the man will be stupid and incapacitated for making a living under our present conditions of civilization.

It was while studying anatomy and physiology that he



made the observation of "squinting brains;" he said: "To one man who had squinting eyes there were twelve who had squinting brains." It is an infirmity in one of the eyes, making the two unequal in power, that makes a man squint. "Just so," he said, "it is with inequality of the two halves of the brain; it is this inequality of the lobes of the brain which makes some men idiots and others rascals. A man," he said, "may be honest on one side of his brain and a rogue on the other; a genius on the right side, but has a hemisphere belonging to that of a fool on the left side."

From Dr. Holmes' long study in anatomy and physiology, and especially in studying the brain and nervous structure, he must be regarded as an authority. He compared brain with brain, the physical conformation, size, weight, quantity and quality of structure, and he says there is a correspondence between cerebral development and mental capacity. Without a good quality of tissue, he always held, there could not be a vigorous mental development. He examined the brains of the uncivilized, the civilized, the criminal, the professional man and the philosopher. He says it is the criminal's brain that has the most squint. A distinguished specialist informs us that there is unequal power in the eyes in about one in fifty of the population. Dr. Holmes says that there are twelve squinting brains to one squinting eye, making about 25 per cent. of the population with squinting brains. The other 75 per cent. are supposed to have their brains born to the parallels of nature, or at least with a very slight obliquity, which can be corrected by the educational institutions and churches of our country. Twenty-five per cent. of the population have their brains born at a right angle to nature's parallel. With such a brain structure and obliquity in mental action, the schools and churches are powerless. This kind of obliquity is only corrected by sheriffs, judges of courts, jails, penitentiaries and the gallows.

It is only the medical men who recognize the asymmetry found in brain structure, and the lack in mental capacity as the cause of poverty and crime. Think of a man with a squint in one of his eyes from unequal muscular strength, who fails to distinguish between his neighbor's property and his own, and then being tried before one of our Topeka judges and sent to the penitentiary for twenty years to correct his vision. Men are criminals, not from choice, but from poor quality of blood, brain and lack of mental evolution. The instincts of hunger and thirst are the demands of a sensory organism for the maintenance of the organism, and are derived from common sensibility. The idiot has no mental action, but he has common sensibility and the special senses, he eats, sleeps and does as other people, except that he cannot think.

Man has a dual nature. From common sensibility and the special senses intelligence is derived. If there is impoverished nervous structure from hereditary taint or acquired habits, the ego, the will power, the ability of comparison and the formation of judgment will be feeble. It is the organic life which makes men criminals; the appetite knows no law except the law of satiety; it dominates a feeble will power.

Faith, hope and inspiration to industry and morality come only from high blood and vigorous tissues.

Dr. Holmes had the highest respect for the skill of the physician. "I am very glad," he said, "that we have a number of practitioners among us who confine themselves to the care of single organs and their functions. I want to be able to consult an oculist who has done nothing but attend to eyes long enough to know all that is known about their diseases and their treatment; skillful enough to be trusted with the manipulation of that delicate and precious organ. I want an aurist who knows all about the ear and what can be done for its disorders."

"The maladies of the larynx are very ticklish things to handle, and nobody should be trusted to go behind the

epiglottis who has not the *tactus eruditus*, and so of certain other particular classes of complaints. A great city must have a limited number of experts, each a final authority, to be appealed to in cases where the family physician finds himself in doubt. There are operations which no surgeon should be willing to undertake unless he has paid particular, if not an exclusive attention to the causes demanding such operations."

The impress of environment may be seen in the formation of character in every avocation of business life. The physician sees everything from his own standpoint.

Dr. Holmes' life, his thoughts, his writings, his religion, his sympathies and his judgment were all colored by his medical education and training, and his experiences as a physician.

Matthew was a tax collector; he handled money; he saw the wise men presenting "gifts of gold and frankincense and myrrh." Luke was a physician; his profession called him among the poor; he saw the shepherds and heard the angels' song of great joy, which shall be to all people.

A refined lady in this city said to me, that she had a sister who had been educated in one of the conservatories of Berlin; she had been brought up in refinement, but after her graduation she married a butcher. The business of her husband has blunted her fine sense of refinement and the finer sensibilities of her nature.

It was probably not his medicine which distinguished him, but his poetry and wit, the blossom and fragrance of all knowledge.

Dr. Holmes enjoyed the eloquent silence of nature. The holy Sabbath quiet of a summer day. He was able to hear the language which the flowers breathed forth, to understand the sighing of the wind and the rustling of the trees. He saw the beauty of nature and understood its fairy tale, which she is ever telling, which whispers of roses, of dancing elves, of weeping clouds, of

dreaming violets. He was in love with his profession and believed the science of medicine to be the world's greatest benefaction; it has broken down the barriers of ignorance, prejudice and superstition. Through such a man as Dr. Holmes the science of medicine has been able to release mankind from the superstition of priest-craft; when disease was considered a demon and devils were cast out at so much per cast. By his thoroughness as a physician and his devotion to the ethics of medicine, the profession owes much to Dr. Holmes. He helped raise it to the high plane which it now occupies; the most humane of all the professions. In his brain was wisdom, and in his length of days was understanding. Dr. Holmes has joined the choir invisible of those immortal dead, who live again. "He was a cup of strength to me." "He had the brain of Plato, the strain of Shakespeare, the hand of Cæsar, and the great heart of Christ." His soul was full of light.

#### DISCUSSION.

Dr. PEARSE, Kansas City: In listening to Dr. McVey's paper on Dr. Holmes, I was in hopes that some one who knew the genial autocrat best would open the discussion. Dr. Holmes was the pride of our profession. He was in it, and yet beyond it, in many respects greater than the average professional man with whom he associated. He was a profound anatomist; he was more than an anatomist, for through the science of anatomy, he studied the Creator of anatomy. It was the philosophy of anatomy, its divine beauties, that called forth from him many of his best sayings. To the average practitioner and student of medicine, anatomy is a long, hard pull; a thing to be dreaded, and yet there is no study, as I think, capable of finer development, as the life, writings and teachings of Dr. Holmes have shown. Dr. Lewis Barr, once told me, in common with a few other students who were about him as he placed a perfectly

dissected foot on the table, that no one with a proper appreciation of perfection, could look at the arch of the human foot and deny the existence of a supreme being. One of the most brilliant anatomists of this western country whose religious views are perhaps well known to all of you, said that if anything could induce him to become a sincere Christian, it was the study of the details of anatomy. It seems to me that the paper of Dr. McVey in which he quotes Dr. Holmes, saying that the criminal tendencies of mankind are due primarily to anatomical differences is in one respect defective. I think it is the crimes against humanity and morality in which that is true; but crimes against property, such as robbery, and arson, are frequently incited by the perfection of anatomical development in man. The love of battle; the love of conquest and of strife which comes with a perfect physique, is frequently the cause of many offenses against property and property rights which constitute so large a proportion of our criminal calendars; but the other class of crimes, the crimes against human rights, and against virtue and morality, are unquestionably due, as our dead professor has so well said, to anatomical defects. There is another thought that springs from this paper that is well worthy of study by all of us. There is a specialist in this audience today who has seen two young girls become maniacs and come under his care from over mental training, and deficient physical training. It proves conclusively that the development of the brain can not go on to the exclusion of the development of the physical organism.

Dr. MEAD: I would like to say, concerning the paper, that I differ very radically from some of the views in relation to *materia medica*. As I understood the doctor, he said that if there were no *materia medica*, if there were no remedial agents at our hand, there would still be something for us to do. It seems to me, on the contrary, that our business would be entirely gone, for it requires,

in the first place, medicine to amuse our patients; the patient when he gets sick wants something to do, and this craving can be satisfied in a large measure by giving him medicine; it furnishes an occupation and employment for him which is very necessary.

Of course we are progressive, but we shall make no progress by throwing our *materia medica* to the fishes, as the paper suggests. The last speaker on the floor talked a good deal about a Supreme Being, as evidenced by the study of anatomy; Trilbyism was his argument, and it cuts very little figure in medicine. Of course the physician who studies histology and physiology gets to the front. The day of the old-fashioned physician has passed away. It is the physician who understands histology, physiology and pathology who makes the greatest advancement; of course it is necessary to understand the science of the human organism—*anatomy*. The practice of medicine, so far as the giving of medicine is concerned, has been greatly simplified in late years by the work of the chemists. I have found their preparations to be reliable in the line which they claim for them, and I tell you that I believe the chemists will be able to make a tablet that will cure any disease to which the flesh is heir.

Dr. HARRIS: I do not wish to detain the Society long, but I wish to say one word in grateful recognition of the paper last read. Should I now return home without hearing or participating in any more of the proceedings, I shall feel well repaid for the time and expense of coming here by hearing this clear statement of advanced facts in medicine of which Dr. Holmes was a distinguished exponent. The physician who trims his or her sails to the breeze of the times must eliminate from his *materia medica* these ready-made nostrums which are a curse to the people and a degradation to the profession. When we give these numerous things which we have been in the habit of giving, and which the old-time phy-

sician gave with better excuse than we, it is a mind diseased ministering to a body diseased; if the physicians knew the effect of the tablets of pharmacists upon the human economy, they would be relegated so far to the rear that they would never again be seen or heard of.

Dr. TAYLOR: It does not seem exactly the thing for us to discuss Dr. Holmes and his views, but it is entirely proper to discuss the views advanced by a member of our Society, as to the matter of crime being due to deficient physical organization, it seems to me that we ought not to let that pass unchallenged. Now, unfortunately for myself, I came from a feeble family. My grandfather was an asthmatic, my mother was an invalid for thirty-five years; one of my cousins died from consumption, and I have always had to be specially careful, but I have managed to keep out of the penitentiary. I think that is some evidence that a man need not be a criminal because he has a poor physical organization to begin with. One of my neighbors can endure more than I can; more fatigue, and more labor of all kinds. I have often wished that I had something of that man's endurance; but he gets drunk and thrashes his wife and cheats his neighbor, and it seems to me as we look back over our boyhood and remember how we grew up in school, we can remember that a time came when we went down the street together and one fellow went into a place of bad resort, and we had a little more nerve and went on, and I don't believe that was altogether due to our birth and to the conditions under which we came into this world. I believe there is such a thing as free moral agency, and I wouldn't like to let the thought that we are altogether creatures of circumstances pass without challenge.

Dr. DAUGHERTY: I listened with a great deal of interest to the remarks of the gentleman over there in regard to physical organization. Old Harriet Martineau once said that man was the result of original constitution modified by surrounding circumstances. I think the old lady

was pretty nearly correct. The fact that the gentleman might have come of asthmatic parents, and had a brother or sister die of consumption, or that there was hereditary disease throughout the family, did not necessarily get him into the penitentiary; but the probabilities are that some of his descendants will have asthma or consumption or some of those hereditary diseases. I think that was the view the gentleman took over there, and not that a man's physical organization, that is, his anatomy, in other words, predisposed him to steal or to murder, or anything of that kind. Take the children that are born of theiving parents in the slums of your cities and that are raised among a criminal element of that kind and come to maturity in that way, they take as naturally to thieving as a duck to water. That is where all your thieves come from. Some years ago the progeny of an old lady was traced back and it was found that more than two hundred and fifty thieves were traced to her. We are the creatures of original constitution, modified by surrounding circumstances, and as for free moral agency, we are free the same as a bird in a cage, that is, within certain limits.

Now, in regard to our tablet triturates: They are very nice things and I use them a good deal, but I don't expect the time to arrive when the manufacturing pharmacist will be able to make a tablet or tablets that will cure every disease that human flesh is heir to. If such a thing should occur, what will become of the undertaker?

Dr. MCCREA: With regard to the statement about the judge sending a criminal to the penitentiary because of his squinting eyes causing him to steal, I think if they knew quite certainly that would be the result of crime, it might prove a very good sort of glasses for correcting the astigmatism.

Chairman TENNEY: It was my privilege and joy to hear Dr. Holmes lecture during three years in his courses on anatomy and physiology, and I will merely say that



it was with a great deal of satisfaction. I don't think I ever missed a lecture; I think every student heard him as often as they could. His lectures were not only complete and full as regards anatomy and physiology, but were delivered in the most attractive language. Much of the time it was poetical, and always witty and full of wise reflections. It was the peculiar beauty of his lectures that he went fully into the details and uses of every part of the anatomy studied, and brought them out with the utmost clearness before us. Dr. McVey will now close the discussion.

Dr. McVEY: "'Tis knowledge that makes us in action how like the angels; in apprehension how like the gods."

I therefore do not want to say anything against the courses of medical education or the views of medical men; the more knowledge we get, the better for us; the better we understand these things, the greater our wisdom in the treatment of disease. There are two elements in the treatment of disease: one element is a permanent element and represents nature; the other element is the medical art which has shifted from century to century and will continue to shift because art is long and we do not understand it. We do not really understand the conditions and cure of disease. I mashed my finger some time ago; I put nothing on it, but it got well, and it got well in spite of neglect; nothing but the resources of my own system did it. So it is in any disease. It is nature that does the work; that is the main point that we are to understand, and as we understand the resources of the system better we shall use less and less medicine. I use very little medicine in my practice; as I grow older I depend more and more upon the resources of the system, knowing that it is nature and not medicine that heals the diseases. Suppose you put medicine on a dead man, will you get any results? Not at all; it is the living tissues, it is the life force that cures all of our diseases, and that

is what Dr. Holmes aimed to teach. That is what we get from him.

As to disease and crime, I said they were *different* manifestations of the same feeble cell action; I did not say they were the same; not at all; but I say that where there is an impoverished condition of the nervous action of the cells, when such people cannot obtain a living under our modern civilization they are of necessity driven to crime. In the paper I have simply tried to carry out the views of Dr. Holmes, as announced by himself.

The PRESIDENT: The hour set apart for Dr. Murphy's paper having arrived, we shall now have the pleasure of listening to him. Members of the Society, it is my especial pleasure to introduce to you Dr. J. B. Murphy, of Chicago.

CAN THE MORTALITY FROM SURGICAL LESIONS OF THE INTESTINES BE REDUCED AND HOW?

Dr. MURPHY—*Mr. President, and members of the Kansas Medical Society:* I must apologize for intruding myself upon you today, as I did not know at what time my paper was to come, and I must return home tonight.

The question of intestinal obstruction is a very interesting one to every medical practitioner. The question of mortality from intestinal obstruction has produced more controversy probably, and that, for a longer period of time, than any other one in the whole field of surgery. Why? Because the subject of intestinal obstruction has been indefinitely classed. There has been a term in use for years—one which I will use—ileus. Ileus is supposed to mean intestinal obstruction, but it does not. If you pick up the medical journals of today, you will find in examining the reports of various authors and operators that one man has a mortality of 100 per cent. when his cases are not operated; another has a mortality of only 66 per cent. when his cases are not oper-

ated. Why? Because the two men include under the term ileus, different pathologic conditions. By the term ileus (and I think we had better use that in surgery for the future) we mean a train of symptoms, and not a definite pathologic entity. By the term ileus we mean a complexus of symptoms, pain in the abdomen, accompanied by nausea and vomiting, with inability to produce bowel movement.

Now, what are the pathologic conditions that can produce these three symptoms? In drawing your attention to them, I wish to refer primarily to conditions of the alimentary canal itself. If we will take a mechanic's view of the alimentary canal, we shall find that it is a long, muscular tube; take it, for instance, from the pylorus to the sphincter ani; it is irregular in size; it has contractions; it has sphincters and valves; it has dilations and has its cæcum. It has another function besides secretion absorption and excretion; that is the power of propelling its contents. This is the function that primarily concerns the surgeon. It has the power of propelling its contents along through that canal; when that is interfered with, we have intestinal obstruction. In how many ways, then, can that be interfered with?

First—By its own inert inability to propel its contents, and

Second—By mechanical obstruction.

The first we will call adynamic ileus; the second we will call mechanical ileus. How is the first produced? By paralysis or by spasmodic contraction. That is, we have an interference with the passage of the contents through the canal by a paralysis of the muscles, either direct or indirect from the central source, or we may have an obstruction to the canal produced by contraction of the muscles as we have in lead colic. Therefore, in adynamic ileus, we must take into consideration the various conditions which produce a paralysis of the intestine itself. I have classified these as follows: Par-

alysis from ischæmia, that is paralysis from interference with the blood supply. I have demonstrated by experiments on the dog that the blood supply of the intestine is carried from two sources. I have here represented a section of the intestine in which the direct supply from the mesentery has been shut off as you notice here, by three ligatures, and the blood is supplied by the parallel vessel which has not heretofore been recognized of importance in surgery. This, represented by the dark line, is the second blood supply, or the collateral blood supply, and the well-trained surgeon very frequently looks to it for the nutrition of the intestine. It is very important. For instance, we can in an experiment, ligate the mesenteric supply for a space of seven inches, the collateral circulation supplies it, and the intestine retains its vitality; but when we exceed seven inches, that is say, ten or twelve inches, the collateral supply from this parallel vessel is not sufficient to sustain the vitality of the bowel, and we have necrosis on the convex side at the greatest distance from the parallel vessel. That is an important practical point in intestinal surgery. We find that when the mesentery is injured, or when the bowel is wounded on the mesenteric side, it is not necessary to resect the bowel, except when a greater distance than six inches, and that, too, on the proximal side, has been shut off in its supply. Now, let us change the experiment; let us ligate the mesenteric vessels here; let us also ligate the parallel vessel and allow the calibre of the intestines to remain intact; when we do that, if we include more than half an inch of the parallel vessel, we immediately have paralysis of the intestine supplied by that half inch, necrosis and death.

Therefore, when we have a lesion that involves more than half an inch of the parallel vessel, it becomes imperative on our part to promptly resect the bowel that was supplied by the parallel vessel where it has been shut off. When we have paralysis here (here the doctor referred to

chart), when more than three inches is ligated, we have ischæmia and death of the wall of the bowel from that cause.

*Paralysis from Strangulation.*—If we have a hernia which has been strangulated for a number of hours, or days, if you please, dependent upon the degree and position of the strangulation, we have death of the wall of the bowel. How soon will that death take place? That will depend upon the amount of tissue involved and the condition of the mesentery, but finally it will depend upon the interference with the circulation.

I have here another drawing, showing you the position of the parallel vessel. If we have a hernia in which we have only a small portion of the circumference of the bowel involved, taking in a portion of the wall, and the strangulation is complete, death is speedy to the portion strangulated. If, on the other hand, we have a large loop of the bowel, involving the mesenteric vessels strangulated, shutting off the supply from this portion, or if we have a volvulus, we may have the supply rapidly shut off from the mesenteric vessels; still the supply of blood from the parallel vessel will be kept up for hours after the supply from the mesentery has been shut off, and will be sufficient to sustain the vitality of the coil. On the parallel vessel, in a great measure, depends the length of time in which a bowel can be strangulated before it becomes necrotic.

If, on the other hand, we perform another experiment: We ligate the parallel vessel at this point (*a*), and at that point (*b*), and ligate the mesenteric at (*c*) what will become of the segment? Shut off all the supply and how long will the bowel live? I found in the dogs a peculiar condition here in the experiments; forty-two to forty-nine hours after operation, the dogs died, and the portion of the intestine that was situated between the ligatures down to the portion at the mesenteric margin had entirely disappeared; *i. e.*, there was nothing left tha

could be recognized as the bowel. I know of no way of explaining the rapid disintegration of that tissue, except by the auto-digestion of the tissue by secretions in the bowel.

Another question comes up in connection with operations upon the circulation of the bowel, and that is where we are making an excision of the bowel, what will be the line of incision if the shutting off of half an inch of the parallel vessel interferes with the circulation? If we make excision of the bowel, and allow a greater portion of the convex surface, that is, on the distal side of the mesenteric attachment to remain, we will have paralysis, ischæmia of the edges, necrosis, perforation and death. Therefore, in all operations on the bowel, in all operations of excision of the bowel, it is important that there should be a greater portion taken off opposite to the mesentery than on the mesenteric side. In that way we insure circulation. In place of making the excision as I have marked it in this drawing, make the line of excision in the opposite direction.

Again, as regards the circulation in the production of symptoms of tumefaction, swelling and distention of the strangulated coil; all of these are dependent upon this parallel vessel to a greater or less degree. For instance, if we will empty this segment of the bowel represented by *a b c*, entirely of fluid and fecal contents, and put a ligature at *a*, and a ligature at *b*, and another one at *c*, allowing only the parallel vessel to remain, we can produce artificially, the condition that we have pathologically in cases of intestinal strangulation and volvulus, *i. e.*, distension of the coil: What will be the cause of this distension? Where does the supply come from? It comes from the parallel vessel. There is transudation from the arterial blood supply which has no return vessel; there is no vein accompanying these parallel vessels, and as soon as we shut off the recurrent flow of the blood, that is, from the mesenteric circulation by these liga-

tures, we have only direct supply. We have the coil rapidly filling with fluid and the contents decomposing, which occasionally causes gas in the coil; but the greatest portion of material found in the coil is due to the transudation. Formerly we were taught that that distension was due to accumulation from above; that is, that it was forced in there. No, it is transudation of fluid from the intestine itself. We have, then, paralysis of the intestines, and swelling from injury or obstruction to the mesenteric artery; we have also paralysis of the intestine and the symptoms of ileus from injury to or obstruction of the cystic duct, we have there a reflex paralysis; that is a point that concerns the surgeon very greatly.

Under the adynamic ileus, I have included pain, nausea, vomiting and inability to produce bowel movement. This is generally understood to indicate intestinal obstruction. Now, with reflex cause we may have exactly the same train of symptoms; for instance, with calculus in the cystic duct, we may have all the symptoms of intestinal obstruction for three, four or five days. Several times during the last year I have been called upon to operate for intestinal obstruction, but found the trouble due to impaction of gall stones in the cystic duct and a reflex ileus.

The next condition is that of spasmodic contraction of the intestine produced by lead colic. Here, we also have the symptoms of intestinal obstruction; they may continue as long as five or six days under treatment in the recurrent cases. This is one of the most difficult conditions to differentiate from true intestinal obstruction. I will refer to that again when speaking of the symptoms of suppurative peritonitis. Peristalsis is increased in lead colic; while in all the other varieties of adynamic ileus, there is an absence of peristalsis. Finally, we have adynamic ileus with very many cases of local suppuration and inflammation of the peritoneum.

It is an every day occurrence to hear a doctor say: "I can't tell when I have intestinal obstruction and when I have peritonitis. We have with peritonitis paralysis of the muscular wall of the intestine from local causes; we have vomiting; inability to produce bowel movement and pain, but we have in the early stage of every case, or at some stage of every case, the symptom of temperature. That is the only thing we can rely on in making a differential diagnosis; it is, to my mind, the most important indication that we can have in making a diagnosis in the early stages of peritonitis. There is besides the presence of temperature, with this variety, as with all the other varieties of adynamic ileus an absence of peristalsis.

Now we will take up for consideration the causes of death from ileus; what are they? Collapse or shock is the most frequent cause. We find our patient with intestinal obstruction, each day getting worse, until finally he collapses and dies; or we may have a secondary peritonitis produced by obstruction. It may be caused either by perforation or by infection through the wall of the intestine where there is no perforation. We have finally, auto-intoxication, which I believe is the principal cause of the depression or shock; *i. e.*, we have an absorption of the decomposed proteids in the intestinal canal producing death by intoxication. How can we avoid these unfavorable results? That is the question that we are all anxious to have answered. How can we lessen the percentage of death from these causes? First, by early diagnosis. I believe that the advancement of medicine depends more upon placing stress upon early and accurate diagnosis than it does upon any other one thing. How will we make a diagnosis of intestinal obstruction? We have pain, nausea, vomiting and absence of bowel movement, and if it be a strangulated or a mechanical ileus, absence of temperature in the early stage; if it be a paralytic ileus, from infection, then there is present a



temperature; true, it may not be more than  $99.5^{\circ}$ , but it is always present.

*Local Signs.*—What are the local signs in intestinal obstruction? First, we will speak of mechanical obstructions. We have with mechanical obstruction, distension of the coil on the proximal side, with violent distension of the strangulated loop. I have already explained that the distension of the strangulated loop is due to the accumulation of fluids. We can by careful palpation and percussion outline certain areas of dullness; we can outline areas of increased resonance, and irregularities in resonance, these are very important signs in the examination of the abdomen. When speaking of irregularities I do not mean the irregular muscular resistance we find when we press our finger tips on the abdomen in that manner, but when we lay our whole hand flat upon the abdomen (the proper way to palpate the abdomen), we can recognize the irregularities by keeping up a continuous pressure, and asking the patient to take full inspirations and expirations. In that manner we can also recognize and better outline irregularities in resistance; we can recognize then the tumor, and can outline irregularities on its surface and in its percussion notes. What I desire to impress on you most forcibly is auscultation of the abdomen, which, I believe, is more important in making an accurate diagnosis in abdominal lesions than auscultation of the chest in making a diagnosis of diseases of the pulmonary organs or the heart. What can we learn by auscultation? By auscultation we can outline resonance or absence of resonance; we can outline the area of peristalsis or absence of peristalsis. In intestinal obstruction, as long as it is not accompanied by peritonitis, there is a continual roar and rumbling in the abdomen. There is increased peristalsis, which is due to continuous effort on the part of the intestine above the seat of the occlusion to force the contents through the mechanical ob-

struction. We find the increased peristalsis always present in mechanical ileus. In adynamic ileus, where it is due to paralysis, there is an absence of peristalsis; the abdomen is just as still as the grave; the stethoscope may be placed on there, and it may be kept for five, ten or fifteen minutes and we will not hear a sound. This is the condition where we have general suppurative peritonitis, if we have local peritonitis, with the stethoscope we can outline its extent in very many cases by the absence of peristalsis over the inflamed area. Occasionally there is chance for error in this connection. Where we have complete paralysis the fluid in the intestine moves to and fro during the respiratory act just the same as if it were in a rubber tube; from this motion we hear a splash, not a gurgle. This must not be confounded with peristaltic action; we will find it uniform with each respiration; but the rumble of peristaltic action of the intestine differs widely from it, as it changes every second.

One act on the physicians part obscures all the information that can be obtained from sensitiveness, pain and auscultation: that is the hypodermic injection of morphine. I believe that the administering of morphine has a most obscuring effect upon what we recognize as the signals of danger. Tenderness is a signal of danger as well as increased or diminished peristalsis. What does morphine do? Nothing whatever to relieve the cause, but it knocks down the signals of distress. As soon as morphine has been given the avenues of information have been shut off, *i.e.*, information that has been derived from the interference with the peripheral nerves. It is my firm conviction that morphine should never be given in case of lesion in the abdominal cavity until the diagnosis has been cleared up beyond a reasonable doubt. If we have peritonitis and give morphine we smother up the symptoms. Morphine paralyzes peristalsis for something like twelve hours; one hypodermic injection of a third of a grain will do it; by the administration the

sign that differentiates between adynamic ileus and mechanical ileus has been shut out; the only signal that is wanted to guide us as to whether we should operate at once for mechanical ileus, or whether we should remain quiescent, awaiting for adynamic ileus. Therefore, in abdominal surgery, in lesions of the abdomen, it is my practice and the practice of my assistants to never give one single dose of opiate of any kind. Stimulants may be given, as whisky, bromide or chloral; you may place fomentation, poultices; even chloroform may be given where the pain is too severe to be borne. These relieve pain and do not affect peristalsis, but morphine paralyzes it almost immediately after its administration.

Now, after the diagnosis is clear, and I may say the task is not difficult, if we have not covered up the signs—which are, I must say, very plain when we consider them in this manner—we have the line of duty yet to perform. If we have a mechanical ileus our duty is plain to operate, and in this class of cases, if we will analyze the literature on the subject we will find the man who had a mortality of 100 per cent. in his cases of intestinal obstructions was the man that called intestinal obstruction or ileus the condition produced only by mechanical causes. The operation must be done speedily; it must be done before necrosis of the bowel has taken place; before the arterial supply from this parallel vessel has been destroyed. That is the time to do the operation, early in the pathologic process before the patient is collapsed. The operation must be early.

How long can we wait? How long we can wait, is answered by that word blood supply. If we know how much pressure is made upon that artery, that may aid us somewhat; but we do not know, as we have no means of estimating with accuracy. We can with the stethoscope down on the sac, in a hernia for instance, recognize the vitality, in the first twelve hours we will find the contents moving about; the motion becomes lower and lower un-

til finally the contents cease moving; we find then no peristalsis, the blood supply is shut off. The doctor will wait eight hours, at the longest, before operating if he can not reduce it. No intelligent practitioner of today will wait in internal ileus until strangulation of the canal has gone so far as to cause destruction of the intestinal wall. No man will do it when he has cleared up his diagnosis; when he is satisfied in his own mind that he can differentiate between strangulation or mechanical ileus, and adynamic ileus.

The next question is: What operation will we perform? Whatever operation we do, do it rapidly; do it quickly. Go into the abdomen quickly, but for heaven's sake get out! That is a good rule; have an idea of what is to be accomplished; open the abdomen, do the work, get out and close it up.

Now, I have included in the causes of death, infection by proteids. Every surgeon here will call to mind a case in which he has reduced a strangulated hernia; where he did the entire operation without cutting, or dilating the neck of the sac, and put the bowel back; the patient went right along two, three, four, or even twenty-four hours with the same symptoms as before reduction except vomiting and then died. Why? He didn't die of peritonitis; he did not die from obstruction; he died from the absorption of the decomposed proteids that were contained in the intestine above the obstruction absorption took place as soon as they began to pass. This occurs without resection, and with resection; and it occurs in a great many cases. I have seen a number of these cases where there was no resection of the bowel, but merely a restoration of the canal, the bowels commenced moving and the patient died. Post mortem showed no cause for death. How can we avoid that? I do not know, but it is my practice in these cases immediately after reducing an intestinal obstruction, either with or without resection, to start in a brisk catharsis, and hasten as much as

possible the escape of the decomposed contents from the intestinal canal. Then, if the patient has passed a few hours without continuation of the shock, I consider him in a fair condition for recovery. [Applause.]

## DISCUSSION.

Dr. M. B. WARD: I do not think that any one who resides in Kansas can add anything by way of discussion to this magnificent paper. I believe I voice the sentiments of this entire Society by thanking the doctor for this elaborate discussion of this important subject. There is but one thing that I want to say, and that is we have learned a lesson which we should never forget, which the doctor from Chicago has so nicely taught us, that the use of morphine should be strictly avoided; that it is the cause of much distress and many deaths. It seems to me that we have been repaid a thousandfold for the time and expense we have been put to in coming to this Society by this discussion. I believe I voice the sentiments of every surgeon here who has operated in the abdomen when I say that in this day and age of the world it has seemed absolutely impossible to avoid the administration of morphine; but if we have learned the lesson today that it must not be done until the diagnosis has been made clear, we have learned a lesson that will repay us many times over for the trouble in attending this society. That is all I desire to say; the discussion was so elaborate and thorough that there is nothing left for me to say.

By a MEMBER: After your diagnosis has been made, would it not then be advisable to give morphine in the interests of the patient?

Dr. MURPHY: No, never give morphine in case of intestinal obstruction; if you have diagnosed intestinal obstruction never give morphine, for just the moment you do that you have made it impossible to relieve the bowel of its contents. As soon as you have finished your oper-

ation you should start in a brisk movement of the bowels, but if you have given an opiate you have paralyzed the action of the bowel for many hours; you have made bowel movement impossible and endangered the life of your patient.

Dr. A. H. CORDIER: I certainly enjoyed this paper very much, but there is one thing to which I desire to call attention which Dr. Murphy overlooked; that is, I think the doctor has placed entirely too much stress upon the question of temperature in the diagnosis of these cases; it is far safer to rely upon the pulse as an indication of what is going on in the abdomen than upon the temperature. You will find that it is absolutely impossible for a patient to have an elevation of temperature when there is shock; you will find this to be the case in both the mechanical and non-mechanical obstructions; you will find the temperature sub-normal, but the pulse will be increased to 120, 130 or 140; so I think it is better to rely upon the pulse as a diagnostic indicator than upon the temperature. Temperature is extremely misleading in these cases. Now, I certainly fully concur with Dr. Murphy in the necessity of early diagnosis in these cases, for upon the early and accurate diagnosis depends the success of the operation. The recognition must be early; but even admitting that it is mechanical obstruction to begin with, you will have the intestinal canal in this condition that Dr. Murphy described, this parietic state of the bowel; and it does not stop there, but you have on top of the necrosis, septic peritonitis; so, then, if you operate at that time your patient goes on to a fatal termination and you lose your case. So you must operate upon these cases early.

Now, in regard to the use of morphine: I certainly endorse the position the doctor has taken. I have not given morphine in my abdominal work for several years. But we have one preparation of opium that I do give when it is impossible to avoid it.

Occasionally you will find a case that appeals so strongly to your sympathy that you can not withstand the impulse to give relief. My sympathies are first with the patient; but I assure you gentlemen that they are also with the practitioner; with the family physician; he is often called into these cases where the suffering is so severe that he must give something: the appeal to him is so piteous that he can not do otherwise; it is hard to get around giving a little morphine; yet, it is bad practice, and should be condemned. The preparation which I use is phosphate codeia it relieves the pain very well, and does not produce this paralysis of the intestine that we find from the use of morphine. It is the only preparation of opium which I have used for three or four years in my work.

Now, in regard to the modesty of western men as we see it illustrated in Dr. Ward. There is a disposition for all that is best in our country to gravitate to the west. It was only a few years ago that when we wanted the best, we thought New York the only place to go; now New York comes to Chicago; it is only a question of time when Chicago will turn to Kansas City, and in a short time Kansas City will look to Topeka. [Applause.]

Dr. J. A. LANE: While at dinner to-day I heard a gentleman remark that he was going to agree with Dr. Murphy when he read his paper this afternoon; I think that nearly every gentleman here was inclined to agree with Dr. Murphy before we had heard from him, and after we heard from him; but there is one thing that we ought to tell Dr. Murphy—perhaps he has found it out—that in this western country things are a long ways apart. I want to tell Dr. Murphy that in my judgment nineteen out of twenty of these physicians present, if they went home to-night and came to a case of whatever you might call it, where there was severe pain in the abdomen, they would probably relieve it. Now, I have

talked with a good many of these older men who have been called to cases of pain in the abdomen, vomiting, symptoms of collapse, and non-movement of the bowels, excepting, perhaps, the emptying of the rectum; and, gentlemen, they tell me that these cases get well. In this western country, when a man is taken with the symptoms which the doctor has so well described, he does not send off for an operator; he sends for the family physician; the family physician comes, relieves his case, and the patient gets well. Now, Dr. Murphy has given us the physiological reasons why this therapeutic agent, morphine, should not be given; but when we find a patient suffering intense pain, and to his appeals are added those of family and friends for relief, there are many physicians who, as Dr. Cordier has said, will relieve it or try to assuage the suffering; there are few, indeed, who will refuse to give it. Now, I wish that Dr. Murphy would mark out a line of procedure for us; we will assume that we are not operators; that we cannot send to Topeka, Kansas City or Chicago for an operator; that we cannot use these opiates in cases of intestinal obstruction, peritonitis, or any of the forms of ileus, which the doctor says is bad practice; I would like to have the doctor mark out a line of procedure for us to get out of the difficulty, and to get out of it as quickly as possible.

Dr. MURPHY: In regard to the question of temperature, suggested by Dr. Cordier, remember that temperature is always present in the early stage of the trouble; I think the doctor misunderstood me there. In the later stage, in the collapsed stage of peritonitis or obstruction, the temperature is down; but you cannot have a case of intestinal obstruction go through its entire course and never have an elevation of temperature; I have yet to see the first case of peritonitis going through its entire course without an elevation of temperature; it is not in the later stage. I think that is what the doctor had reference to; I was perhaps a little too brief on that point.



In the early stages of peritonitis you always have temperature, but not always in the later stage.

Now, in regard to the other question, what should you do? There are many, many things to do without giving opium; you can put on poultices; you can give whisky; but I must tell the doctor that, while there is no way that I know of to stop the pain as nicely as by an hypodermic of morphine, neither is there any act that he can perform that is so dangerous to the life of the patient; you have got to take both of these into consideration. Are you justified in performing the latter for the effect of the former? No, not at all; you are not justified in jeopardizing the life of your patient for the sake of affording relief from pain. You can put on poultices; you can use chloroform, spirits of chloroform; you can give whisky in large doses; whisky is very good in these cases; you can give many things which will occur to every surgeon. When your patient has pain in the abdomen, send for a diagnostician, and if the patient has gall stone, calculi or renal colic, give him a large hypodermic of morphine.

Dr. BLACK: This one discussion alone will certainly repay us for coming here. I want to say further, and I want to say it in the presence of Dr. Murphy, though I know he is very diffident, that every surgeon here knows and appreciates that intestinal surgery has been immensely simplified and made a thousand times more safe and a thousand times more useful to the surgeons throughout the world by the investigations, researches and experiments of Dr. Murphy. I say further, that the invention of the Murphy button, to which the saving of so many lives is due and will continue to be due, will live as a monument to the memory of Dr. Murphy long after he and you and I are gone. He has made it possible, gentlemen, for the surgeon who lives in the little town, who has no hospitals or trained nurses, who has no appliances of cleanliness except a few antiseptics and

water, to perform operations and save lives which would otherwise be lost. I now move, Mr. President, that this Society tender to Dr. Murphy its sincere thanks for his presence with us today, and for this valuable discussion on the subject of intestinal surgery. The motion was unanimously carried.

Dr. J. H. BRIERLY read the following paper on

#### FOOD INSPECTION.

In the United States it is estimated that it costs annually three hundred million to get born, two hundred and twenty-five million to get married and twenty-five million to get buried. The last item being the smallest is at least no reflection on the medical profession.

Every one can not die of old age or accident and such utilitarian measures as alcoholism and microbism are powerful causes why much of the last sum is expended. To offset the destructive effect of alcoholism and microbism food inspection has contributed so much and has become so familiar that in discussing it I may merely remind you of what you already know. I certainly will not become so scientific that you will forget, as we often do, plain practical matters and that our mission is to cure our patients.

The pessary period in medicine is passed. Laparotomy is limping along and apendicitis is still present with us, but food inspection has contributed more to our physical and commercial growth of recent years than all of these.

We were a long time learning that Jacob's well was not very important to us and wells dug by grandfathers do not furnish pure uncontaminated water for their grandchildren.

We have also learned that fish, oysters and milk have been discovered in the act of spreading typhoid fever, and that man dies from using certain foods and thrives on certain others. Hippocrates said the medicinal art had its origin in the dietetic needs of mankind. In sick-

ness and health the body needs food. Nature stores up eight or nine days consumption of respiratory and azotized food energy, and before this period is completed Jesus becomes materialist long enough to start Christianity's prayer with a petition for bread. He knew that more men and more religions have been starved for lack of bread than for lack of truth. Food has been a foe as well as a friend to mankind. Food inspection shuts out the foe and introduces only the friend at his best. To get food at all is the great problem of the race. To allow the use as food of only that which is pure and healthful is the end of food inspection. Food is never so cheap but it is beyond the reach of many and never so dear but purchasers are found if it is only appetizing enough. Health boards allow sale of adulterated foods but have well established the principle that they need be sold for what they really are. Food furnishes iron for blood and phosphorous for nerves. The mineral constituents of the blood are lost with ease, and recovered with difficulty. You see sluggish movements and lethargic mental processes when phosphorous is absent.

Food inspection is as much a business and political question as a scientific one. Any movement toward supplying pure food or of ridding the markets of immature and indigestible products immediately raises questions of business and politics. Producers and dealers who are anxious to fill the capacious maw of the public must be heard in behalf of their marketings.

It has resulted in better and more thorough inspection to have this business class look into the subject along with the scientists. We perceive also the need of a little politics in our medicine when we remember that, while the limit of lawyers' fees has never been reached, a bill was recently introduced in the Legislature of Illinois to prohibit a surgeon from charging more than \$100 for a capital operation.

We began a rigid inspection of cattle and pork because

Europe demanded it. Mr. Morton, in carrying out the inspection of meat, so well begun by Jerry Rusk, has been met in his advocacy of the free coinage of the American product of beefsteak with the retaliatory measure of excluding live stock and fresh meats from Germany and other continental countries, not because we did not have as good and perfect inspection of meat in the United States as anywhere in the world, but because the solution of the differentials on sugar, given by other departments of our government, were not proven satisfactorily to these countries with an embargo in their eye. And yet, if the exportation of inspected meat shows up the inspection of our own, interstate consumption increases. So, if we cannot Americanize so many foreigners, we can foreignize more Americans with better food. The pleuro-pneumonia found recently in Lyon and Geary counties was only a mistake. England calls up the pleuro-pneumonia bugaboo whenever she is reminded that we are doing any business that is profitable in cattle, while the foot and mouth disease has decimated stock in Great Britain at a rate which pleuro-pneumonia never accomplished, even in the days when it prevailed in this country. The inspection of foods by national, state and city boards of health and sanitary officers has been limited by recent appropriations, and has generally been confined to chemical tests to ascertain the character of adulterations and coloring matter, and is often limited to ascertaining whether the animal or vegetable is mature and fresh. Manufacturers have aided the advocates of pure food by the advertisement given a good article and the bad showing of an adulterated one. The agricultural departments have done their greatest work in requiring foods to be stamped and sold for what they really are, even when the compositions are healthful. Iron filing, sand, bogus coffee berries and sawdust bread should be sold on their merits as tissue builders. The coffee berry made of rye, flour, molasses, chicory and other ingredients, stamped

and pressed and polished into a *fac simile* of the genuine, though it may ruin a rival dealer and rob the purchaser, is wholesome, but is not useful as an antidote in a case of poisoning. A factory in Berlin makes two hundred quintals daily of sawdust bread by fermenting sawdust and mixing with one-third rye flour. France is far more skillful than the United States in adulterating foods. Arsenic, lead and copper have, under inspection, ceased to be used as coloring matter for food, the harmless vegetable colors are used instead, and the once common poisoning from canned goods rarely occurs. Incidental to food inspection is the published information that water is purified by boiling. Filtering or adding chemicals and citric acid will prevent water from carrying cholera germs.

The knowledge of the use of chloride of sodium, nitrate of potash, salicylic acid and borax as preservatives and conservatives for food is common property. Mixing cheaper articles with dearer ones is also understood.

My excuse for noticing oleomargarine at some length is that it has attracted more special legislation towards itself and has been perplexed and hampered more in its attempts to spread itself than any other article.

The dairymen have fought under the motto "America for Dairymen."

But oleomargarine has preserved its consistency in burning Africa and runs smoothly over the bread of the chilly Pattigonian. Laws have been passed to change this condition, but fifty million pounds of oleomargarine sold in the United States in a single year has not been enough to bring creamery butter to a price within the reach of a class who require that amount of fatty food. A visit to the always clean and appetizing surroundings of a butterine factory would remove a surprising amount of prejudice against oleomargarine.

The udder is the most frequent seat of tuberculosis in the cow and it is questioned whether the fat in the milk

should have free, open switch right of way, and the fat in the back of a steer or the leaf suet or any fat of any cattle be crowded out of market or be ordered to appear in pink or black, not because it is unwholesome, but because it satisfies a larger demand than the demand for ordinary butter. Oleomargarine has consented to have its name stamped in big letters upon its top and sides, and to be sold defaced with revenue stamps from the time it takes shape in the factory till it reaches the consumer, and one state says you shall be pink and another black, and now Missouri follows Massachusetts in saying you shan't be any color at all. The legislation against oleomargarine has removed from it the odium of bad butter, since in all its waiting for the decision of the courts it has not turned rancid. And it is said to have taken premiums second and third at a dairymen's fair in Pittsburg when a facetious committeeman listed it and deceived a professor of an agricultural college on the board of awards. Wide crucial chemical tests pronounce it a healthful food. Hotels in Ohio must keep notices conspicuously posted, not that they have dishonest clerks, or poor cooks or waiters to be tipped, but that they use oleomargarine. Its cheapness lightens the burdens of the poor in the cities. The revenue license charged retail dealers is so high that country merchants do not handle it.

All of our cities suffer from the evils of their milk supply, which is prone to store up germs and furnish good culture media for all manner of microbes. Separator milk is sold for skim milk, skim milk for whole milk. A campaign for pure milk should be sought as much as a campaign for pure politics, and if successfully carried out would diminish tuberculosis and often avoid the desquamatory debris of scarlet and other fevers. Borax takes the place of ice to preserve milk and the lactometer shows the specific gravity of watered milk to be the same

as excessively fatty milk. We may sterilize by boiling, but this renders it unpalatable to some.

Very little microscopical testing of the milk supply has been practiced. The licensing of milkmen and the inspection of dairies, which as it becomes general would insure pure milk and would be a great sanitary revolution. It is said that in an epidemic of typhoid fever prevailing at the present time in Stamford, Conn., 147 out of 160 cases have been traced directly to the milk supply, and 12 of the 13 remaining indirectly to the same cause. The water in the well where the milk cans were rinsed was found to contain 7,000 bacteria to the cubic centimeter of water. The amount of water was small but sufficient to start a large colony of microbes when the culture media was put into the cans. The latest milk story is of a new Jersey milkman who sold thirteen thousand quarts daily from thirty cows and a pump.

The Board of Health of San Francisco recently annihilated every cow in the State University dairy. The cows had advanced tuberculosis and were furnishing milk to the neighboring inhabitants.

While the inspection of milk has hardly begun and the inspection of most other foods has been left to the individual and very scant public appropriations and slight official supervision, the inspection of meat in all the large stock exchanges and slaughter houses in the United States is carried on in a very thorough manner. The appropriations for the inspection of meats amount to millions, because it is designed to open markets, and is in part a political question, and the usefulness of the inspection has not been denied, though brought about partly for political and business reasons.

The government inspection of meats began in 1890 in the United States and has been steadily extended and improved upon ever since. It is more thoroughly scientific and comprehensive than any other work undertaken to insure pure food to all classes of consumers. The es-

establishing of quarantine and lines beyond which stock must not be moved in certain seasons of the year has saved to live-stock dealers in the United States many times the cost of the inspection, and veterinary science has been accorded a higher place in the learned professions.

The ante mortem and post mortem inspection of meats includes the condemnation and removal to tanks of animals affected with swine plague, hog cholera, anthrax, malignant catarrh, pyæmia, septicæmia, mange, actinimycosis, inflammation of lungs and intestines, Texas fever, tuberculosis, animals advanced in pregnancy, and any disease or injury causing elevation of temperature. In these tanks they are rendered in such a way as to prevent their withdrawal as food. In addition to the ante and post mortem examination of hogs for export the microscope is used for detection of trichinæ, and when these are found the hogs are condemned to the fertilizing tanks. The frequency with which animals are affected with the above diseases is not overstated and is commonly believed to be less frequent than investigation verifies.

That the cysts and bacteria found in animals have often been reproduced in man by partaking of infected meat no longer requires proof. Since Robert Koch revealed the identity of bacilli in man and bovines much new and valuable light has been shed upon the origin of disease. Sir James Simpson once said, for the purpose of his argument, a cow was as good as a countess. The physiological equality of human and bovine females is well established.

The ante mortem inspection of cattle cannot often go further than to raise a suspicion of tuberculosis, the gross post mortem appearances may confirm the suspicion, and the microscope settles the presence or absence of bacilli. Sometimes we look for bacilli and fail to find them, but we are not always ready to say no murder has been committed because we fail to find the murderer pres-



ent wher. we discover the victim. Exceptions do not break down generalizations. It has been questioned whether bacteria are incidentally present while a **specific poison causes the disease.**

**Those who satisfy themselves with this view of micro-organisms never eat pork in a sample of which they have seen trichinæ, nor beef in a portion of which they have seen tubercle bacilli, not that they are thinking of any poison, or that trichinæ may convey tuberculosis or tubercle bacilli convey trichinosis, but they spontaneously agree with Prof. Bouchard that "the organism is the strong place, the microbe its assailant, and the struggle between them is the infectious disease."**

Owing to the ubiquity of germs, and because of natural or artificially induced immunity from the contagion of the bacteria of tuberculosis some physicians and the general public are still doubtful about the propriety of posting the notice of the New York Board of Health, which reads: "Consumption is a contagious disease. This apartment has been occupied by a consumptive and it may have become infected. It must not be occupied till an order from the Board of Health that it be cleansed is complied with."

The sporadic skeptic in microbes overcomes them with normal physiological germicidal secretions of mucus, saliva, bile and pancreatic juice until an unusual number of pathogenic germs take him off and he becomes ineligible to a scholarship in the Koch school of sanitarians. He gets no lesson when bedbugs are found to contain bacilli and may carry tuberculous contagion, and merely says, they don't have night sweats.

When all the cavities of the bodies are seeded with microbes and ptomaines develop the properties of morphia, and auto-intoxication and auto-infection are realized he takes a peep into a microscope or a polariscope, and believes the saying, "The more thou searchest the more thou shalt wonder."

The microscope terrifies the soul of the skeptic in the bacteriological world. He is often as unfamiliar with the revelations of his neighboring physician's microscope as he is with the townships in the county adjoining his own. He condemns the mania of the public for purging and credits himself with a miracle when called to a high fever, preceded by a convulsion which yields to a brisk cathartic because intestinal putrefaction and decomposing germs are swept away.

There is no way in which a government can manifest more of the true spirit of paternalism than in securing to the masses pure and wholesome food in full measure. There is no surer way of raising up good and loyal citizens than in providing for the nourishment of the bodies of little children that they may become the possessors of pure blood, sound bones, firm muscles, clear minds. Better than the solution of the currency problem, an equitable adjustment of the tariff, or a system of just arbitration between labor and capital would be the establishing and faithful execution of such laws and measures as would sweep out of existence every business that attempts to thrive by starving the mothers of families, that render the honorable title of bread winner a travesty, since for bread they offer a stone.

#### DISCUSSION.

Dr. TAYLOR: There is one subject that appeals especially to my sympathies in connection with this matter, and that is the baby. I don't know whether the doctor mentioned it in his paper. I think it is a sad thing that our babies have to be starved by poor milk. There is hardly a summer passes but what I notice the wonderful difference in the condition of babies in the cities and in the country. I come here to town and I see the hearses going out to the cemetery with little children and I find that there is a terrible mortality among the children; but in the country, where it is possible to get pure milk, the

mortality is very much less and I can not help but believe that the larger part of it is due to poor milk. As to the other parts of the paper, I leave them for others to discuss.

Dr. CARSON: There is a gentleman living in my neighborhood that used to be a hand in a mill close to Kansas City. He said that one morning a finely dressed gentleman came there and gave the miller an order; they had been engaged in the business of grinding buckwheat, but the bran had been thrown to one side as of no value; there was no demand for it; this gentleman said that he had a large order for buckwheat bran, that he had two tons that he wanted ground fine. Curiosity was aroused, and my friend asked the proprietor what probable use was to be made of the bran. The customer in question was the owner of a large pepper factory. I leave it to you to conjecture what use he wanted to make of the bran.

Dr. BRIERLY closed the discussion: I will not detain you longer. I am very glad I did not mention the babies; I didn't want to say so much that there would be nothing left for anybody else to say. I at first wondered what the doctor meant by the story about the pepper factory; but I suppose my paper may not have been very clear to him, and his joke was not at first clear to me; but I take it now that he referred to the shameful adulteration of pepper by the substitution of buckwheat bran.

J. R. SCOTT, M.D., read the following paper on

#### THE DOCTOR AND HIS FADS.

In casting about for a subject, when in an unthinking moment I promised to write a paper for this meeting, thoughts like these filled my mind: "I am too young and inexperienced," for I enjoy the distinction as well as the inconvenience of being the "kid doctor" in a town whose medical men are all young. "I can cram my brain full of

other men's ideas, and pass them along, half clothed, to a long-suffering and patient class of men, and they, out of the kindness of their hearts and pity for my weakness would probably not kill me, so my life would be safe; but doctors have enough to stand without me giving them any pseudo-scientific hash."

While these thoughts crowded themselves into my busy hours and occupied my leisure moments, I realized how hard it was for a young man to say anything to interest those of much wider experience, I went to lodge one evening and there was a candidate to initiate, and after the victim had been raised to the sublime degree of "grand high bumper," and order restored, the late candidate looking bewildered and nervous, hardly knowing whether he was really a full fledged member of the Eminent and Royal Order of Shanghais or not, the presiding officer arose and in solemn tones and great dignity spoke as follows: "It is always customary at this point for the new member to make a speech and tell us what he thinks of the order, and how he likes it thus far." And as I sat there I said to myself an epitome! I am the new member and the medical profession of Kansas has asked me to write a paper, and I cannot do better than to tell how the profession appears to me, and how I like it, so I shall occupy a few minutes speaking about the doctor and his fads.

It is generally supposed that medicine is a science. I was taught that, I have heard doctors of wide experience say it was, and yet, to hear those same men talk and see them act makes you doubt it, or at best allow that it is as as yet in the embryonic state. After all their knowledge and drill, doctors are turned about by each new wind that blows as are the laity. One is forced to the conclusion that there is more in medicine than scientific knowledge, and that the best practitioners are often not the most scientific.

I have known skilled surgeons to refuse to operate be-

cause they could not have made what they considered the necessary arrangements and offer as excuses, "have not the proper instruments;" "the place is not fit;" "it would be criminal to operate, on account of danger of septic infection," and the patient dies without an effort to save him. They were scientific, but not up to what the practicing surgeon or physician should be. They failed when an emergency arrived. Yet I knew of an undergraduate living in the knobs of Kentucky, at the hour of midnight, without medical assistance, amid surroundings wholly unfavorable, by the light of a smoky lamp, without tube and with few instruments, successfully perform a tracheotomy and save a child's life. Another in a backwoods district of Mississippi with a pair of tweezers and needles and thread from the work basket of a grandmother stop the blood and close the wound of a would be suicide who had cut his throat with a razor, and the wound healed by first intention too. Another, in like locality, from an old umbrella steel, with a hammer, axe and file manufactured a uterine curette which he needed and did not have time to send for and his patient recovered as readily as if it were shop made. I don't want to be understood as crying down scientific knowledge and investigation; but there are such things as scientific stupidity and plain horse sense in the practice of medicine. I have also observed that the doctor who can spin out the longest Latin names and give in technical language the physiological effects of drugs and the pathology of disease, is not always the one that cures the most cases.

As in other lines, it is the man that gets there, "That hits the spot," that people want, whether he arrives at the proper solution from scientific deductions, horse sense or intuition.

Some doctors know how but can't do; others can do but can't tell why.

In the other sciences, when a new discovery is made it is a fact and remains a fact; but in medicine this year

sees many of last year's facts relegated to the rear, only to give way to new facts which in their turn will be given a place beside the blue glass and other extinct crazes. The time was when medical men were too narrow, they could not be moved from the beaten paths of their predecessors. Now let a new idea get into print, particularly if it has the savor of limburger and bologna, and nearly every doctor is after it like a flock of sheep following the bell-wether over a fence, in fear lest they be called "old foggy" by the so-called progressive medical men.

A number of years ago these ultra-progressive fellows heard something about antiseptics in surgery. You know germicides were all the rage and the progressive men were all off on a chase after some new poison to kill microbes, they traveled so fast to keep at the front that they did not have time to think or they might have discovered what the old fogies did, that absolute cleanliness was the basis and foundation, not bichloride of mercury. Now the progressive men, to use a slang expression, have "come off the perch," but the principle of treating wounds aseptically still lives.

Another fad that followed was the mania for removing ovaries; these same antiseptic surgery men started off and if a woman ever complained of pain in the ovarian region a laparotomy was advised. Every young surgeon considered it the acme of fame to have done one. Surgery received valuable lessons and much knowledge was given to science; but many a woman was unnecessarily unsexed to satisfy the craze.

You all remember what a furor Koch's lymph caused. The newspapers took it up first and reports were all in its favor. The progressive fellows got in the swim again. The microscope became an absolute necessity as a means of diagnosis, all the doubts and uncertainties in medicine were going to give way before bacteriology, in fact a revolution was close at hand; the deep things in pathology were to be revealed. It was proved beyond doubt

that the tubercle bacilli caused consumption, and reasoning by analogy all disease was produced in the same way. Now they say, "The microscope has reached the limit of its usefulness, and to chemistry we must look for all future advancement. We are not so sure as we were about the bacilli being the cause of the disease, perhaps it is the effect." Meanwhile the men designated as behind the times, have gone slow and picked up the facts their hasty brethren did not have time to see, and are able to diagnose and treat a case of tuberculosis as successfully as the up-to-date man.

Then there is the communion cup fad that has been discussed in the sacred and medical press. No case is cited where disease has been communicated; but the danger, the possibility, is appalling to these progressive fellows and, while speaking, they place between their lips a cigar moistened by lips and rolled by hands far more liable to be polluted by contagion; still they wonder how good church people can take such risks. There may be danger, but there are many other customs where the danger is greater. Clean out the dirt first, do the dusting afterwards.

Then there are fellows that profess to believe disease is spread by kissing. Poor fellows, it only shows where they go for their caresses. There are lips so enchanting that a microbe would expire in ecstatic delight should he linger on their rosy surface the fractional part of a second.

Kissing is dangerous, Warden Chase and Senator Householder have found that out; but it is not because of any contagion.

Brown-Sequard started the pace in 1889 for a stampede to animal extracts with his elixir of life. And today we have the spectacle of one of America's foremost neurologists at the head of a company that is running opposition to the Erie Medical Company, restoring weak men by injections of that same old elixir under a new name,

and to Dr. R. V. Pierce in the treatment of diseases of women by a like process.

The latest fad is diphtheria anti-toxine, judging from newspapers and certain foreign medical journals it is a grand success. Those booming the new treatment tell how the death rate has fallen off, those against how mild the epidemic has been and that, with the other treatment should get the credit. The preponderance of evidence seems to be that the serum craze will soon go the road of tuberculine and that chemistry will drop back alongside the microscope as one, but not the main factor in the diagnosis and treatment of disease.

As a novice I can not see why the American doctor will cry down Paskola, the Keeley cure or Amick's consumption cure or any of the American fakes and take so kindly to those of foreign birth.

In the whole realm of medicine there seems to be an element of credulity and speculation only rivaled by the famous Mississippi Bubble in the early part of the eighteenth century. The condition of medicine today reminds one of the boom times in Kansas, every doctor expects to die famous- The boom will burst one of these days, speculation will stop, credulity will be replaced by common sense, medical men will not become wild over each advance in their science.

Doctors will become what they should be, hard headed men with wide knowledge and a disposition to prove all things and ever ready to advance and perfect their knowledge in medicine. The great discoveries yet to be made will be tested by time and careful and patient investigation and rise like the morning sun growing clearer and stronger as time advances only to set when this material world and the necessity for medical knowledge shall have passed away. Not like a rocket on a Fourth of July celebration rise quickly to the zenith leaving behind a trail of sparks, explode and disappear in the darkness.

The science and art of medicine has made a very rapid



progress in the last twenty years, we have kept such a pace that some of us are dizzy, we have often spoken when silence and more investigation would have prevented our being laughed at by our patrons. The world at large are a shrewd set and when they see grave and dignified professors taking up and advocating a theory, and proving it to be the correct one beyond all question and then repudiate it in a few months or years as being absurd and untenable there is but one conclusion: "Doctors are either knaves or fools."

## DISCUSSION.

Dr. S. E. SHELDON: Some one has said "There are two classes of people in this country, those who change their minds, and another class who never do;" I can very well understand how a physician may at one time believe that a certain line of thought or of work is correct; that a certain theory or line of action is right, but upon investigation find it to be the opposite. I do not believe that the physicians of the country today are addicted to the fads, as the doctor would make us believe they are. I believe that physicians today are thinking men; I do not believe that they are going to take up all the new ideas that come along and put them into practice until they have been tested and shown to be not wanting. It is no doubt true, as the doctor said, that a few years ago we were a little too prone to seize upon everything that came along, but I think that now, whenever anything is presented to the profession that has not been thoroughly tested and proven correct, that we take it with several grains of allowance. I look upon the profession of medicine today as a science; I do not regard it as an art as we did a few years ago; as a science it may not be as well understood or as perfect as some others; still I believe that every day we are drawing nearer to the point of certainty and perfection than ever before; it is essentially a progressive science. The microscope and the various

means now available for ascertaining true pathological conditions are aiding us very largely in arriving at correct conclusions. Therefore, I do not think we should have the name of hobby riders, until we are demonstrated to be such; physicians are not such as a rule. Doctors ought to be alert and active at all times to receive the truth, and ought not to incur the reproach of being faddists when they adopt a thing which appeals to the reason and satisfies it as being a good thing. We should be slow to adopt untried expedients, but hold fast to that which is good.

Dr. FRYER, of Kansas City: I unfortunately did not hear all of the doctor's paper, but I was greatly interested in it; and I want to speak upon one point, Mr. President, upon which I shall differ very materially from the doctor; that is, his views in respect to the antitoxins and tuberculin, of which I shall speak later. Now, Mr. President, in these days, any man who will question the efficacy of one antitoxin, I refer to the diphtheria antitoxin; any man who will question its power for good cannot have read of the work of a number of bacteriologists throughout the world. These experiments, made first upon animals, prove beyond doubt that these antitoxins do cure diphtheria. The statistics show beyond doubt, Mr. President, that no other treatment will produce the same curative effects that this antitoxin does. The experiments have not only been made in this country, but they have been made in Europe; they have been made in Japan by one of the greatest bacteriologists living. The work that Behring has done in Germany, first in animals, and then in man, has shown you beyond doubt that as a treatment for diphtheria the antitoxin has no rival. Now, one word in regard to tuberculin. This has been put down as a fad, and apparently it was. Prof. Koch had it taken out of his hands by the pride of the German government before he was ready to give it to the world: he was not yet ready to give it up, but the civilians took it

away from him and threw it into use. It was taken from him and tried, and tried erroneously, too, Mr. President.

I have it from the great bacteriologist, Dr. Sternberg, not more than ten days or two weeks ago, that in Italy they are doing what I suppose we shall do, and what every bacteriologist knows we can do, immunizing against phthisis; people who have an inherited tendency to phthisis will readily become immunized against the disease by the administration of this antitoxin. Why, Mr. President, don't you and I have phthisis? Because we are immunized against it, and others that have that tendency can be immunized as well as we. That is what these experimenters in Italy (I don't know their names) are doing at this moment. This being a fact, Mr. President, I shall close by saying that we have the best authority for believing that antitoxin has accomplished a great deal of good, and there are as yet no recorded cases of its having done any injury.

A gentleman corrects me; he says that there is a recorded case, but I have lately read that there are no cases where injury followed from the use of pure antitoxin. Perhaps it might be discovered that this was an impure article. I believe, on the whole, the medical profession should welcome the antitoxines as of great use.

Dr. HARRISON: If it were possible, I would like to make possible the remark of the speaker in regard to the physician's fad of laparotomy or ovariectomy. I really believe that this absurdity has been the means of making more lady physicians than any other one thing; and I think we are near the day, too, when the lady physicians will have the opportunity of retaliating.

Dr. GILBERT of Topeka: I can not agree with the author of this paper in some of the statements he has advanced. He says we are not satisfied with the tubercle bacillus as the cause of tuberculosis. What more evidence does he want than has been furnished? The laws that Koch has laid down are, first: Isolation of the

germs; second, cultivation and inoculation and the production of the original disease; and third, recovery of the bacteria. That has been done with tuberculosis. Pure cultures have been isolated from tubercular cases; these cultures have been introduced into suitable animals, and the original disease tuberculosis produced. Afterwards these tubercles could be isolated in first cultures, and the original germ recovered. Is not that sufficient evidence that tuberculosis is caused by the tubercle bacillus, and that the tubercle bacillus is not there as an effect, but as a cause?

Dr. SCOTT: I expected my bacteriological friend over here would jump onto me, and for his satisfaction I will say that so far as I am concerned, I do believe that is the cause of the disease, but it is now questioned by a great many men who, two or three years ago, were loud in proclaiming it to be the cause. That is all I care to say. I called attention to these facts because I believe we are too quick to take up a thing of this kind. I do not say there is nothing in the diphtheria anti-toxin, but I do not believe there is in it all that is claimed for it. Only last evening, while waiting for the train I picked up my medical journal, and found an article by a New York physician in which he says that what is claimed for the diphtheria anti-toxin is way beyond what can be proven.

Dr. B. E. FRYER, of Kansas City, Mo., read the following paper on

#### PUS FORMATION—ITS FIELD AND FACTORS.

The formation of pus being one of the most frequent and familiar of pathological phenomena, its presence until comparatively lately had not caused the majority of practitioners to reflect fully upon the factors to its production. It has been, it would seem, something like the idea of the Irishman, who, when the grandeur of Niagara

and its wonderful falls were pointed out to him and his mind directed to the immense body of water pouring over the rocky edge, asked, "What is to prevent it?" Do the majority of practitioners, even now, do all they should to prevent the Niagara of pus, or fully appreciate the pathological meaning of its presence? I believe they do not.

Moreover, I am convinced that many practitioners, and I include a large number of general and special medical men of ability, are more or less free from all acquaintance with many of the facts and theories which modern pathology furnish in regard to pus formation and to other pathological advances. And I am not only convinced that this is true from conversing with physicians, but also as a derivation from my experience in discussions with them in medical societies. I would not include, as a rule, the younger men in this rating, for most of these have been trained in later views; but I refer more especially to those who have been longer in the profession, many of whom have become so "set" in their views in pathology, that when anything new is offered to them are willing to throw it over without investigation as to its probability, and without even going over the facts presented to them so as to familiarize themselves with points claimed. In other words, a rejection is made from ignorance.

Holding this view, I believe that papers on modern pathological facts ought not to come amiss, hence my remarks tonight.

The object of this paper is to consider pus formation, its field of work and its factors. And it may be well here to state that we shall not include in our consideration the fluid of chronic or cold abscess which is not a collection of pus and should not be so called, but in reality is an emulsion, its factors being loose fat, few cells fattily degenerated and broken down and emulsified with an effused albuminous fluid, plus disintegrated tissue.

The broad statement can now be made that pus can

only be formed in or on living tissues by microbic action. I am aware of course that it is possible by the injection into the tissues of certain irritants and caustics and strong acids to produce a limited amount of innocuous pus, but that this fluid will not produce pus if inoculated into other individuals; and, moreover, will not extend its own immediate limits or quantity in the same individual; nor will it produce any constitutional symptoms in the individual in which it is produced.

A typical picture of pus formation is found in cases of ulcerative endocarditis, for in the muscular wall of the heart in these cases may be found minute abscesses quite near, generally, the endocardial surface.

On a section of a portion of a heart wall containing such an abscess we can observe a small gray or yellow point, with a zone of reddened (congested) tissue just around it. If one of the portions containing an abscess is hardened and stained, we shall find the following conditions presented to us:

By the aid of a low power objective, we can notice in the center of the purulent focus one or more minute blood vessels with the lumen more or less filled by a thrombus, which latter will have a microbic accompaniment and many leucocytes. The vessel wall will be indistinct and more or less structureless. The lymph space around the vessel, and a zone of tissue immediately beyond, will also show this structureless picture not normal to it. In these zones we may or may not find microbes, but beyond them we find an enormous number of leucocytes, infiltrating the muscular tissue everywhere. These leucocytes are rapidly dying and becoming pus corpuscles. In addition to the leucocytes we find a few larger cells—proliferated and unproliferated connective tissue cells—whose source and function we shall refer to later. Beyond the periphery of the abscess, but close to the latter, it will be found and sharply defined, too, that the tissues are in normal condition save this, that leucocytes are infiltrating even the

normal tissues there for a certain distance, this normal tissue contrasting, however, markedly with the broken down and disintegrating muscular tissue of the abscess center proper. (Woodhead.)

With a high-power objective we can obtain with each field observed more complete details of the changes. We can see the cocci in large numbers in the thrombotic vessel. Beyond the vessel some few details of structure can be seen. The staining, however, is imperfect, but we can observe the disintegrating muscular fibres and can make out some of the leucocytes, and also a number of nuclei, which latter are from disintegration of other leucocytes. In the zone beyond this, which may be called one of coagulation necrosis, we find the leucocytes, many of which are more or less active, as shown by their taking the stain, and occasionally one still having amoeboid movement.

At the periphery of the abscess we find the larger connective tissue cells, which are to be differentiated from leucocytes; these are by some pathologists called fibroblasts. We can also see in the body of the abscess more readily with this power the disintegrated muscular tissue. And beyond the margin of the abscess leucocytes infiltrating the otherwise normal muscular interspaces.

Allowing for the difference, anatomically, in the attacking point—that is whether the microbes work first from within or without the abscess. We may observe practically a nearly similar condition where pus is formed on a mucous or a serous membrane. Take the latter first, and for this the omentum furnishes a good field. Recalling the histological arrangement here, we find the endothelial covering with the stomata and connective fibres and connective tissue cells, and last the blood vessels. With this ground understood we can see here, by microscopic aid, the leucocytes exuded from the engorged blood vessels and also the microbes. We shall observe the endothelial cells proliferating and separ-

ating, and we shall find the connective tissue cells in the lymph spaces also multiplying and separating. The leucocytes and proliferated endothelial cells are exuded in and upon the serous membrane and become pus cells by microbic action.

We may in gonorrhoeal ophthalmia also see the destructive and pus producing effect of the gonococci. The microbes here produce exfoliation of the epithelium and can be seen in the epithelial cell and intercellular substance and may be traced as far beneath the epithelial covering as the submucosa, from the vessels of which latter, leucocytes are exuded or escape to become included in the protoplasm of the gonococci, and later to die and become pus cells.

In several of the other mucous membranes the gonococci produce a similar result, but the work of the gonococci there also, as well as in the conjunctiva is confined to a comparatively superficial field; the deeper pus collections occasionally found in gonorrhoea and as a sequela to it both in the male and female must largely, if not wholly, be dependent on a microbic coworker—of which the gonococcus is the essential pioneer. I shall allude to this again however later.

We shall find the same result as far as the phenomena attending pus formation is concerned in the non vascular tissues—or rather, to state it more definitely, in tissues free from blood vessels. Take the cornea for instance. Here a centrally located abscess may be produced by inoculating with a pus producing microbe like the staphylococcus p. a., and in this instance the leucocytes which form the pus cells are derived from the lymph channels, both the wandering and the fixed cells furnishing their quota to the central assembly. Later the circumcorneal blood vessels throw into the work leucocytes which pass through the corneal lymph spaces to join the throng directly—some of them perhaps lingering on the way to cloud the cornea in the abscess' vicinity. In the vitreous



humor the same pathological changes occur—the leucocytes traveling to the involved focus in this case, possibly still farther from their distant habitat in lymph space and blood vessel, with a chemio-toxic power that is even more remarkable than in some of the other tissues similarly involved.

We can observe the same changes which produce pus in other parts or organs of the body; in the joints, in large organs like the liver and elsewhere in pyemic conditions, the actual pus formation is practically similar.

Having briefly described an abscess and its surroundings, and also other pus collections with their environment, we may now consider more in detail the conditions which lead up to pus formation in general. This we can do the more readily, and perhaps the more satisfactorily, by referring to the abscess or localized pus formation again first. We observe here the thrombotic vessel with the microbes, and notice that the vessel wall and a zone beyond it yields a structureless picture to the microscope. The tissues of the zone have been killed—probably digested by the toxins of the microbes. In this zone we find leucocytes and a few larger cells and debris. The leucocytes here scarcely take the stains, but we may find in those which do that then the protoplasm contains their bacteric enemies. Now while it is difficult, if not impossible, to say how the microbes affect the death of the tissues and the leucocytes, there can be no doubt of their doing so. The theory that in their metabolism they excrete a toxin which kills and afterwards digests the tissues first and the leucocytes later, would seem to be the most satisfactory. At any rate, we actually find in pus, as we shall see later, peptones and other derivatives of digestive action. (Woodhead.)

In the zone beyond that which is structureless the microbicidal work is more confined to the leucocytes and the fibroblasts, perhaps; still, even here, if the microbes be very numerous, their destructive work on tissues still

goes on. We find the leucocytes have come to the site of the portion involved in large numbers and their function in neutralizing the toxine, killing the bacteria and digesting and removing them (probably they have the power of all these added to that of the fibroblasts), in most instances is unsuccessful in bringing about a cessation of the purulent formation. At any rate the leucocytes and the proliferated connective tissue cells form a zone around the microbes, and if numerous enough, stop microbic multiplication and action and bring pus formation to a halt.

We may now consider two of the theories as to how this result obtains:

First, that of Metschnikoff, and known as phagocytosis. The author of it has shown much industry and intelligence in arriving at his conclusion. He divides the phagocytes into "two broad groups of *fixed* phagocytes (endothelial cells, etc.) and free leucocytes." And he calls attention to the fact that all leucocytes are not phagocytes; but of that later. The theory in a nut shell is "that in the property of its amoeboid cells to include and destroy micro-organisms, the animal body possesses a formidable means of resistance and defence against these infectious agents." Now, ingenious as the theory is, there can be offered several objections to it. It may be partly true, but it certainly is not completely so. One of the facts which Metschnikoff brings forward among others to support his theory viz., that the phagocytes take the microbes within their protoplasm is true, and it is mainly upon this one fact that he seeks to establish his whole theory for the destruction of microbes. There can be no doubt that phagocytosis occurs, that is admitted and this process may have its part, possibly even a large part in causing destruction of the microbe. But it would seem that the leucocytes and perhaps their coworkers, the endothelial cells, first have the power of either killing or very

much weakening the micro-organisms *before* they take the latter into their protoplasms. In other words that a large part of the phagocytic function is that of scavengers. And we mention here in support of this one or two clinical facts. It is known in relapsing fever, that during the pyrexia the spirillum which produces this fever exists in the blood serum only and not in the blood corpuscles, while in the apyretic stage the microbe is only found in the corpuscles and not in the serum, indicating that while the micro-organism is in its most active state the phagocytic power is not exhibited and *vice versa*. I know that Metschnikoff offers as against all opposers of this view that living microbes in certain instances are more readily taken up by phagocytes when injected into an animal than are the same microbes which have been killed before injection. But of this objection it may be urged that many of the laboratory microbes have as part at any rate this necessity for their destructive work, namely, that they must first become stationary; and also to allow of any action by leucocytes they must be brought to a standstill; and this the living microbe is more apt to do by making a thrombotic dam to the blood current in one or more of the blood vessels; and that when stationary, the leucocytes can the more readily swarm round them and destroy them. While the dead microbes are more apt to circulate indefinitely and without any concentrated leucocytic action upon them. Moreover, Sternberg states that microbes which can be found in phagocytes, are rarely so found in the early stages of the disease which they produce.

Another theory, and probably the most satisfactory of all which have been offered, is based upon that of Behring in regard to immunity. This involves the view "that some substance is formed in the body of the immune animal which neutralizes the toxic products of the pathogenic micro-organism." (Sternberg.)

Now this theory is, of course, mainly applicable to gen-

eral or systemic effects of microbes, and it would seem to be the underlying fact which is applicable not only in so far as the destruction of the toxins are concerned, but should also include a power destructive of the microbes which produce the toxins. Now reasoning from the general to the particular, we may apply this theory for the destruction of the pus microbes. And in seeking as to where the antitoxic power resides, we need hardly look further than the leucocytes, and perhaps also the connective tissue cells, the fibroblasts. As I have previously stated, no one doubts the fact that these two morphological elements are capable of taking microbes within their protoplasm; *but it would seem that they can only do so after the micro-organisms are either disabled and dying or dead.* And it would also seem that in all probability the leucocytes at least are capable of throwing out a "digestive fluid or some material detrimental to the existence of micro-organisms may prepare the organisms, killing and even partially digesting them, taking them into their protoplasm as inert matter and there continuing the process of digestion." (Woodhead.)

This theory appears to be more tenable than that of Metschnikoff's, certainly more complete.

It can be readily appreciated of course, in their work of saving the tissues from the attack of the microbes, that the leucocytes succumb in large numbers and that they as well as the surrounding tissues perhaps have before them, but given that the individual microbic working is local, that there is no general toxic effect, and that the leucocytes are sufficiently numerous, the pus micro-organisms sooner or later are not only barred from invading new zones, but are also destroyed in and removed from zones they have occupied by the leucocytes, the killed and injured leucocytes furnishing, in the main, the morphological elements of the pus.

Bearing on the germicidal properties of leucocytes, Vaughan, in his remarkable paper on nuclein in the

*Medical News*, December 23, 1893, states that "Blood serum contains a nuclein. . . . The origin of the nuclein found now for the first time in blood serum is an interesting question. Does it come from the disintegration of the polynuclear cells, or shall we regard certain white corpuscles as uni-cellular organs whose function it is to secrete this nuclein?"

On these two theories, I will quote from Sternberg: "Numerous experiments have been made within the past two or three years with a view of determining whether pathogenic bacteria are, in fact, destroyed within the leucocytes after being picked up, and different experimenters have arrived at different conclusions. In the case of mouse septicemia already alluded to, and in gonorrhœa, one would be disposed to decide from the appearance and arrangement of the pathogenic bacteria in the leucocytes, that they are not destroyed, but that, on the other hand, multiply in the interior of those cells, which in the end succumb to this parasitic invasion. In both of these diseases we find leucocytes so completely filled with the pathogenic micro-organisms that it is difficult to believe that they have all been picked up by a voracious phagocyte, which has stuffed itself to repletion, while numerous other leucocytes from same source and in the same microscopic field of view have failed to capture a single bacillus or micrococcus. Moreover, the staining of the parasitic invaders, and the characteristic arrangement of the gonococcus in stained preparations of gonorrhœal pus indicate that their vitality has not been destroyed in the interior of the leucocyte or pus cells, and we can scarcely doubt that the large number found in certain cells is due to multiplication in situ rather than to an unusual activity of these particular cells. But in certain infectious diseases, and especially in anthrax the bacilli included within the leucocytes often give evidence of degenerative changes, which would support the view that they are destroyed by the leucocytes, unless these

changes occurred before they were picked up by the leucocytes, as is maintained by Nuttall and others. We cannot consider this question definitely settled."

I will quote from Metschnikoff, which, according to my view, militates against rather than confirms this bacteriologist's theory that the phagocytosis is *the* factor in recovery and immunity:

"Where a given species of animal is especially sensitive to the onslaught of one or other micro-organism, there during the course of the disease the phagocytes are inoperative, including none or almost none of the bacteria. On the other hand, when by previous vaccination these animals have been rendered refractory, their phagocytes have acquired the property of including the same bacteria." (Sternberg, p. 21.)

This clearly indicates that while the bacteria are most virulent the leucocytes have first to injure or destroy them before admitting them into their protoplasm. In other words, that phagocytosis is in many instances a secondary step in bringing recovery.

The condition of acquired immunity from or of cure of infectious diseases cannot in all cases depend on phagocytosis, for we have in some of these infectious diseases the fact that the microbes, say, for instance, in diphtheria, are not found in the circulation, but are local. Their toxins of course circulate, and it is in that disease injections of serum destroy the toxins, probably, first, and prevent the multiplication of their microbic causes later. Moreover, the symptoms of the disease, practically the disease itself, is produced by injections of filtered cultures. What part then can phagocytosis play there?

Further, "Ogasata and Iasuhara in a series of experiments made at the Hygienic Institute at Tokio, (1890) discovered the important fact that the blood of an animal immune against anthrax contains some substance which neutralizes the toxic product of the anthrax bacillus. When cultures are made in the blood of dogs,

frogs or white rats, which animals have an immunity against anthrax, they were found not to kill mice inoculated with them. Further experiments showed that mice inoculated with virulent anthrax cultures did not succumb to anthrax septicemia if they received at the same time a subcutaneous injection of a small quantity of the blood of an immune animal. So small a dose as one drop of frog's blood or one half a drop of dog's blood proved to be sufficient to protect a mouse from the fatal effect of an anthrax inoculation." (Sternberg, p. 256.)

"Behring and Kitaoato have obtained similar results in their experiments upon tetanus and diphtheria." (Sternberg.)

In considering the field of pus formation, it may be said that probably no tissue can be excepted; certainly no structures which include connective tissues can be. Of course some tissues offer a more ready receptacle for pus formation than others; and this is especially true of the looser so-called cellular tissues.

There is one important organ of the body that is scarcely ever invaded by pus and that is the spleen. I have every reason to doubt its frequent formation here unless the microbic cause is reinforced by trauma. In all of the post mortem examinations of bodies dead from pyemia which I made during the war it was observed, while pus could be found in all of the joints, in all of the important organs and viscera, I cannot recall a single case in which pus was discovered in the spleen. I met with one case of splenic abscess after the war which had a traumatic cause as one of its factors.

As we shall see later, certain of the pus-producing microbes can only grow in or on a certain tissue; and what is also true is the fact that certain pus-producing microorganisms when put into one tissue will produce simply an abscess, and in another structure will cause death.

Cheyne has proved, for instance, that the proteus vulgaris, if injected into the subcutaneous tissue of a rabbit's back, will cause an abscess; while if it is introduced into the dorsal muscles will cause death. Acute infective osteomyelitis seems to be limited to growing bones. The peritoneum, as every one is aware, can be a possessor of pus, yet considering the fact in these days of numerous coeliotomies, how rare is pus, and while every modern laparotomist tries his best to make his intraperitoneal operation as aseptic as possible, this is not always, many times cannot be, completely possible; still the operator knows that he has within the peritoneum the aid of a great absorbent sac, which if not too many microbes be permitted to remain in it, that this great lymph space will most hospitably absorb and safely provide for a large number of some of the pus cocci without damage, showing after all that pus microbes and pus here would not be as readily multiplied as if placed perhaps in ordinary connective tissue.

It will be essential in referring to the pus factors to recall some few histological points; and first as to the leucocytes in the blood, "we find:

"1. Small lymphocytes, which are smaller than the red corpuscles. They have a readily stained large spherical nucleus which nearly fills the cell.

"2. Large lymphocytes which some histologists consider as an advanced stage of the above. They have a large nucleus surrounded by a well defined protoplasmic zone. These two forms make up 25 per cent. of the leucocytes in blood.

"3. Mononuclear elements or transition forms—one nucleus, not spherical, but with a depressed center.

"4. Polynuclear leucocytes smaller than the last; nucleus with several lobes or several nuclei. They make up 70 per cent. of all the leucocytes in the blood.

"5. Eosinophilous cells—the nucleus stains less deeply than the last. The granules of the protoplasm stain very



deeply with eosin. This cell is but sparsely found in healthy blood." (Sterling.)

Now, as also furnishing morphologous elements to the pus we must perhaps add the plasma cell of the connective tissue, and we find in the connective tissue also the granule cell, which latter is quite an active element in pus formation. This is the eosinophilous cell and is more frequent in the connective tissue than in normal blood.

The micro-organisms which produce pus in man are not of many species, and Sternberg states: "Of these the two most important, by reason of their frequent occurrence and pathogenic power, are the staphylococcus pyogenes aureus and streptococcus pyogenes; next to these come staph. p. albus, and the following species are occasionally found: Staph. p. citreus, staph. cereus flavus, staph. c. albus, micrococcus tenuis, bacillus pyogenes foetidus, micrococcus tetragenus, micrococcus pneumoniae crouposa. Two or more species are often found in the same abscess; thus Passet in 33 cases of acute abscess found staph. aureus and albus associated in 11, albus alone in 4, albus and citreus in 2, streptococcus p. alone in 8, albus and streptococcus in 1, and albus, citreus and streptococcus in one. . . . Robb and Grisky have shown that under the most rigid antiseptic treatment micro-organisms are constantly found attached to sutures when these are removed from wounds made by the surgeon, and that a skin abscess frequently results from the presence of the most common of these organisms—staph. epiderm. albus." (Sternberg.)

Of these microbes the micrococcus pneumoniae may be eliminated probably, and while it is frequently found in pus from middle ear and other sites, it is probably accidental and plays but a small part in pus making.

We must add that the most active and malignant pus producer is the gonococcus. This microbe has, from the difficulty of definite and absolute demonstration, been the cause of much discussion. Still from the fact that it is

found in the pus cell, that it does not stain by the Gram method, we should have no difficulty in recognizing it. "No similar picture is presented by pus from any other source, with the exception of that from a form of puerperal cystitis, which Bunn has described. But in this the diplococci contained in the pus cells were to be distinguished by the fact that they retained their color when treated by Gram's method. Owing to the difficulty of cultivating this micrococcus, and the importance under certain circumstances of not making a mistake in its diagnosis, these characteristics are of exceptional value." (Sternberg.)

There are a few conditions which should be remembered in reference to all the above-mentioned microbes. The ordinary pus producers can only manifest their pus-producing power after gaining admission beneath the surface. And if they gain entrance to a blood vessel so long as they circulate with the blood no pus is formed; but if there be an injured or diseased focus they may cause thrombosis there and set up their pus factory in the surrounding tissue. On the surface of the cutaneous epidermis or of the mucous epithelia an abrasion must occur for them before their work can begin; were it otherwise there could be no freedom for man from surface pus formations, it being well known that one of these species of microbes, the staph. epiderm. albus, is a normal inhabitant of the cutaneous surface at all times. On the contrary the gonococcus needs only a contact with certain mucous membranes to begin its despicable work. And while this microbe of Neisser may have and undoubtedly often does have assistants in destructive work, such as the staphylococci, still this latter species cannot begin pus formation on a mucous membrane until the gonococcus has previously prepared the mucus surface by abrading it. Were it otherwise the ocular and other mucous membranes for the most part would never be free from pus. But in all probability the part played by the staphylococcus

when found with the gonococci is a secondary one in most instances, at any rate in the conjunctiva. In the mucous membranes of the genitalia with the gonococcus for a pioneer, a very much deeper-seated work of destruction may go on in the formation of abscesses and other pus accumulations, with the staphylococci as a follower or coworker.

Both streptococci and staphylococci are found in pus from the middle ear, but here the preceding inflammation has abraded the mucous membrane and given these microbes access for deeper work.

As to how the microbes destroy the leucocytes and other cells which come to the front to battle against them can only be explained by the micro-organisms forming "either of a poisonous chemical substance which acts as an irritant, or by its direct digestive action on the protoplasm brings about a process of degeneration which has been compared to that produced by the enzymes when acting on albuminoid materials; in the immediate neighborhood of these organisms both highly organized cells and connective tissues are in fact digested." (Woodhead.)

Frequently there is some diminished resistance, the result of trauma or other depressing causes which precipitates the pus microbe at the point. We have this for instance in ulcerative endocarditis, with its precedent abscess of the heart wall. Ribert's experiments would seem to prove this. He injected cultures which produce the lesion without effect until injury of the valves of the heart; then abscesses followed in the heart walls, such as I have described in the early part of this paper. In a general way we can say that the extent of a pus formation may be taken as a measure expressive of the resistance of the part involved plus the virulence of the microbe. It might be formulated thus: The extent and severity of the pus collection is inversely as the resistance, directly as the virulence of the microbe.

As is generally known, pathogenic attenuation of

micro-organisms or the reverse can be experimentally brought about, so it can be readily inferred that the increase or diminution of virulence of microbes in a given case may occur, in which there is also a lessened or increased resistance of the individual. Probably all the pus producing microbes are applicable to the above, which may be regarded as a law.

I believe that the fact of the attenuation of virulence and the ability to increase again the pathogenic force of a microbe has a very important clinical bearing. Take the gonococcus, and every careful genito-urinary surgeon recognizes that the majority of cases of gonorrhea treated leave him before a complete cure. The microbes in such cases are still to be found in the urethral follicles, attenuated in power, it may be, but capable of producing a sharp gonorrheal attack in the female. The male believes he is cured, marries, and carries in all probability the sentence of permanent suffering to his wife.

One other point as to the pus microbes, and an important one, too, is often shown and known to take place after other pathogenic but non-pus-producing micro-organisms have caused lesions. This is true in diphtheria, where we may have and do have pus produced upon the abraded pharyngeal mucous membrane, with deep purulent foci resulting, and with occasionally septicemia or even pyemia. This condition as a sequela of diphtheria might result in making nil the otherwise successful work of antitoxines. This fact has resulted in an effort to combine an antitoxine for pus microbes with the diphtheria antitoxine.

In some cases of purulent peritonitis, too, we may have the colon bacillus as a forerunner, perhaps, of the other pus microbes. Possibly, also, some of the ordinary pus producing micro-organisms reinforce each other; in any rate more than one species is often found in the same pus from various sources.

Now, a few words as to the makeup of pus: This fluid,

if taken from acute abscess, has very little odor, a specific gravity of about 1030, and is generally alkaline in reaction. "It contains from 10 to 15 per cent. of solid matter of which two-thirds are albumen." (Green.) In it may also be found peptones, leucin, etc.

If we examine recently formed pus microscopically we can observe that the pus corpuscles are in various conditions of degeneration. Some of them if we place them in the warm stage will perhaps still show the amoeboid movement. Others are as quiet as death, though not too far gone in degeneration to prevent them taking the stains. Others while still preserving shape show signs of a fatty break up and osmic acid will show the fat. We may also see some granular debris.

The microbes causing the pus we examine may be found if the fluid is very recent, but generally the microbes are too far gone to take the staining in large numbers. This does not apply to gonorrheal pus for obvious reasons. Beyond a doubt the majority of the pus corpuscles are leucocytes. We find a few of the large connective tissue corpuscles, but they are as a rule degenerated. We find also shreds of broken down tissues.

#### DISCUSSION.

Dr. LANE: I have been asked to open the discussion on this paper, but I think Dr. Fryer has not only opened it, but has come very nearly closing it, as he has presented the two prevailing views on this subject, that of Metschnikoff, in which he ascribes to the leucocytes the property of phagocytosis, and the later views of Behring and others, which ascribe the vital property to the serum, this property of toxin, or antitoxin, as the case may be; there are several of these poisons which have taken a different name. Mr. President, and gentlemen, as we look over these two theories, one advanced in opposition to the other, while good has perhaps come from it, it has always seemed to me that they ought to be harmonized.

I cannot see that the theory of Behring in placing his anti-toxin in the serum, the intercellular substance, is in any way antagonistic to the theory so ably advanced and still maintained by Metschnikoff and his adherents. Is it unreasonable to think that if the cocci throw off the toxin that is poisonous to the system, that the system likewise does not throw off the toxin which is poisonous to the microbe? I think you have it, gentlemen, in a nutshell. Now, you may call it nuclein; you may call it antitoxin or what you please, but that these bacilli are killed in the presence of leucocytes is unquestionable; that they are taken into the body of the leucocyte while yet alive is unquestioned. If they be not too numerous, the process of phagocytosis goes on and they are destroyed; if they are too numerous for the phagocytes, phagocytosis is destroyed, and the microbe proliferates correspondingly. Wherever there is injury, the process of leucocytosis goes on more rapidly; wherever there is an invasion of microbes, possibly with the exception of typhoid fever, there is a multiplication of leucocytes. Wherever you have a disease and there is no corresponding multiplication of leucocytes, as has been shown, I think satisfactorily, the disease will terminate fatally. You take it in pneumonia, in which the leucocytes do not increase in proportion to the invasion, the case will invariably terminate fatally. Take the disease of pneumonia in different races of people, and it has been shown that the colored people, who are most susceptible to pneumonia, is the race in which there is the smallest number of leucocytes. I think the paper the doctor has presented is on the frontier of medical science, and I believe, when you think about disease where pus formations come in, that it is a cellular process, and we must think of it on this line. Physiology is cellular; we have no such name as cellular physiology, and yet we have no other physiology than cellular physiology. I like to compliment the doctor on this paper; I am glad that he has read it; we ought to

have more like it, and I hope that physicians as they look upon disease, they will look upon the cellular pathology, and when they fight disease, they will aid these leucocytes in warding off the disease; aid them in their proliferation instead of combating them in their development, that they may develop the toxin, or by virtue of their bodies, devour the microbe, whatever it is; and it seems to me, gentlemen, that the theories of Metschnikoff and Behring may be harmonized; you may call the substance whatever you wish. These leucocytes the doctor has spoken of under one general head; there are three or four varieties of them, which, I don't suppose he cared to take time to mention, and it is probable that they have different functions in the physiological economy. I believe I have nothing further to say except to again compliment the doctor on his paper.

Dr. SHELTON: I regret very much that I did not hear all of the doctor's paper, but there is one point that I do not wish the society to accept without first considering the matter a little further. The doctor in one place, in speaking of the toxins or ptomaines of micro-organisms or bacteria, or of micro-organisms, spoke of them as excreta, and Dr. Lane speaks of them as being thrown off, and in that way being destructive. If my observation and study have been correct, these ptomaines, or toxines, or in whatever form you may have them as the result of bacteria, are not excreta; they do not occur in healthy tissue, but they only occur as a process of fermentation as a process of destruction.

Dr. LANE: How would you account for an animal that is naturally immuned?

Dr. SHELTON: I do not believe it is the correct teaching of today that the bacteria themselves are the offending material, but that it is a chemical product produced by them during the process of decomposition. I think that all the bacteriologists in studying this matter have proven this beyond question, and, Mr. President, if you

will only go a step further, if the society will only go a step further with me, if you will take any amount of pathogenic germs that have not undergone decomposition, where no ptomaines have formed, you can introduce them into the peritoneal cavity or any other tissue without any injurious effect whatever. It is not, as I understand it, until we have decomposition of the germs that we have injurious material; until we have a definite chemical product. I simply speak of this, Mr. President, because I did not want to sit still and have it understood that I believed that these toxins or ptomaines were simply thrown off. Dr. Lane went very carefully over this matter of phagocytosis. What is phagocytosis? What is it that destroys these pathogenic germs? I think today the best observation, the best thought we have on this subject is that that it is not the multi-nuclear cells, the phagocytes themselves, or the leucocytes, but it is the nuclein that they possess, or perhaps, I might more properly say the nucleinic acid which they produce which is the destructive principle to the pathogenic germs. They do not destroy them as was said in the paper, or as Dr. Lane has also said, while they are active, but the nucleinic acid, which is a chemical product produced by these multi-nuclear cells is the agent of destruction. I believe that is the correct theory today; that it is the nucleinic acid produced by these multi-nuclear leucocytes that acts as the destructive principle in this tissue. Now, that settles another question that seems to be somewhat disputed and that is regarding the blood serum; whether the blood serum is destructive to pathogenic germs; I think it is, because it has been proven that the blood serum itself contains a certain portion of this nucleinic acid or this nuclein in some form or other, and it is from that that we obtain this result.

Dr. FRYER closed the discussion: In regard to the leucocytes furnishing the antitoxin, very interesting experiments have been made, in the first place, Mr. Presi-



dent, in regard to the rapid increase, as Dr. Lane very properly says, where diseased conditions are brought about, either locally or generally, of the increase of the number of leucocytes. Experiments have been made, Mr. President, by throwing foreign substances, such as wheaten flour, under the tissues, which have produced the flow of an enormous number of leucocytes to the point. Now, certainly, this is significant, but whether the serum or the leucocytes contain the antitoxin, of course, we cannot tell, but if it is in the serum, we know that there must be some cellular action back of it all to perpetuate and make permanent the conditions in the serum to reproduce it. No pathologist here tonight would be willing to state that the serum is capable of reproducing itself without cellular action, and if it is not the leucocytes, from whence comes the antitoxin? Now, as to what my friend, Dr. Sheldon, says in regard to the excreta of bacteria. Of course, it is very difficult to tell whether the toxins are produced by the bacteria excreting a substance, or not; it is not known; but certainly in the metabolic changes which occur in their nutrition, in their reproduction, we have as a result, these toxins; whether it is a matter of excreta or not, it is impossible to say; but certainly in the changes that occur in their living, their reproduction and their death, we have these toxins produced. Another point that is not generally known and one which makes it difficult to reconcile these theories is this: By taking the shells of dead bacteria, sterilizing them and injecting them under the surface, we can produce localized pus. I have no doubt myself, that the leucocytes are carriers of the antitoxin. If not, as I said before, whence is the antitoxin made a permanent factor, in the production of immunity in the living subject?

Dr. G. A. WALL read the following paper on

MEDICAL LEGISLATION A.D. 1895.

The title of my paper, as you will see later on, covers a multitude of sins and their expose. The intent is to denounce only a few personally, and merely to show the regular profession of Kansas what was done by the committee, or better, some of the committee, for medical legislation during the last Legislature and how it was defeated. I do not desire that anyone shall feel that he has been unfairly dealt with, so I will avoid personal allusions, although I have good grounds to make them, and circumstantial evidence which would certainly criminate some prominent physicians in being instrumental in defeating the law. For the sake of harmony and good feeling, I deem it best that no names be mentioned in this short story of a much abused medical bill, and ditto committee. I intend to avoid all reasons why a medical bill is needed, because that ground has been gone over so often that it is now a tiresome story, but I expect to give as brief and full an account of the actions of the committee as possible, showing what obstacles were encountered and the abuse heaped upon the regular profession of Kansas by the various quacks and pathies.

As the representative of the regular profession on the Legislative Committee I can justly say, in the slang phraseology, "I had a picnic," and while we did not gain a medical law, I can assure you without hesitation that I have been amply repaid for my pains by the vast amount of experience I gained as a lobbyist. In order that you may all see the amount of hard work that was done by the committee and that you may lay the blame for defeat where it justly belongs, I desire to start with the meeting of physicians held on May 15, 1894, in this city. As you know that on that date physicians of all schools met in Topeka to adopt a suitable medical bill. When we met, our present Secretary of the State

Board of Health had copies of the Illinois law printed and brought before the meeting. After a somewhat lengthy discussion this was the bill agreed upon by the body, subject to some changes, which were to be made, if necessary, by the Legislative Committee appointed by the Chairman (Dr. C. H. Guibor). This committee consisted of nine members, three from each school. After the meeting adjourned, printed circulars were sent to all the physicians in Kansas, setting forth what was done at this meeting and earnestly requesting their hearty co-operation in support of the measure. We also asked for financial aid, but I am grieved to say the physicians did not have very great faith in our integrity, for the amount received did not permit of the committee indulging in any extravagant champagne supper. The amount received to aid medical legislation was \$100, which was expended as follows: To Dr. Dykes, for postage, etc., \$53; to D. W. Mulvane, attorney fees, \$40; to *State Journal*, for printing, \$7. It was now drawing close to the beginning of the Legislature and the committee of nine was found too cumbersome, so in November a meeting was called and a subcommittee of three was appointed by the Chairman, Dr. Guibor, consisting of Dr. C. F. Menninger of the homeopathic school, the writer from the regular and, last but not least, Dr. J. L. Furber of the eclectic, who, at the May meeting, was greatly in favor of stringent legislation and fought so vigorously for it before that body that many of us who had known him were greatly elated to think that he had reformed, but we found that it was only a trance from which he very soon recovered, as evidenced by his actions later on.

The bill was now in the hands of the subcommittee for final revision. We submitted it to legal advice and found that it would have been unconstitutional under our Constitution as adopted, while the same is not true in Illinois where the law is now in active operation. I desire to say that only such changes were made in the proposed

bill by the attorney as would make it conform to our Constitution and save it should the courts be called to pass upon it; the text remained exactly the same as the one adopted at the meeting. The bill was then submitted to Dr. C. F. Menninger for his approval, which he gave, but we did not consult Dr. Furber because he said the bill on the statute books was good enough for him—what a wondrous change of opinion! Later on the doctor changed his front again, as I will show by his connection with another meeting. During the week or ten days before the meeting of the Legislature Dr. C. H. Guibor and myself spent many nights in Copeland County getting acquainted with the various members of the Legislature and endeavoring to obtain as favorable a House Committee as possible. Through the kindness of Mr. Speaker Lobdell we were permitted to suggest the names of a number of gentlemen, any of whom would be agreeable to the physicians of Kansas. I desire to say here that Mr. Lobdell was heartily in favor of a good medical law. Shortly after the Legislature convened the following gentlemen were named on the Committee of Hygiene and Public Health, viz: J. A. Campbell, Doniphan County, Chairman; Dr. George W. Hallenbeak, (Rep.) Gray County; Dr. J. S. Halliday, (Rep.) Comanche County; Dr. Frank H. Smith, (Dem-Pop.) Sherman County; Geo. W. McKinney, (Pop.) Mitchell County; Alfred Pratt, (Rep.) Hamilton County; G. G. Cornell, (Rep.) Waubesaunsee County. Before the committee was named Mr. Cornell was heartily in favor of a medical law; in fact said ours was not strong enough, but for some unknown reason he declined to sign the committee report and also voted against the bill on final passage. The Senate Committee being a standing one, there was no change in the personnel from the previous session. Its members were: Dr. E. T. Metcalf, (Rep.) Chairman, Anderson County; D. McTaggart, (Rep.) Montgomery County; Levi Dumbald, (Pop.) Lyons County; A. E. True,

(Pop.) Waubaunsee County; John Armstrong, (Pop.) Barton County. The majority of this committee, as you see, were Populists. We appeared before them once and then became thoroughly satisfied that our labors before them would be in vain. They would not listen to any argument, but insisted on saying, "Just put me down against the bill," claiming it was class legislation and the people did not ask for it. On February 4, 1895, a joint meeting of the Senate and House committees was held in the Lieutenant Governor's room to hear all arguments for and against the bill. The medical profession at large was represented by Dr. C. H. Guibor and myself, other physicians having been invited but failed to come. The opposition, led by F. P. Baker, and T. E. Bowman, consisted of Christian Scientists, Clairvoyants, Spiritualists, Mind-healers, Vitopathists, (whatever they are); the Homeopathists represented by Dr. Eva Harding, and the Eclectics represented by the dignified and irrepressible Dr. Furber. It was before this meeting that the doctor had an amendment to the old law, which he desired and insisted should be adopted if any law was to be passed. His reasons therefor I fail to understand, because he did not fall within its scope. I was unable to obtain a copy of the amendment, but indistinctly remember the sense of same; it was somewhat as follows:

Be it enacted, etc.—Sec. 1. Whoever shall remove the ovaries of a young girl under 40 years of age shall, if found guilty, be fined in the sum of \$500 and sentenced to the penitentiary for fifty years.

Sec. 2. Whoever shall remove one or both testicles from a youth under 45 years of age, or any time before the menopause, shall, if found guilty, be fined in the sum of \$1,000 and sentenced to the penitentiary for fifty years.

But the main argument of the evening against medical legislation was made by Bro. T. E. Bowman, who was selected by Bro. F. P. Baker as the organ of the opposition. He read a lengthy, well prepared and I may say

very able address of its kind. It consisted mainly in denunciations and villifications of the regular school, classing them as drunkards, opium eaters and instigators of the liquor habit among the people. The medical bill he denounced as a trust, or an attempt to form a monopoly, by which we could rob the "dear people." Of course Mr. Bowman does not believe in monopolies, but I am sure that when the rate of interest is endangered he becomes greatly excited. I wonder if he thinks about the "dear people" when they are compelled to borrow? But, pardon me, I am transgressing. The most amusing part of this meeting was the forced union of the various pathies in their endeavor not to tread on one another's toes and still remain united in the villification of the regular school. The weight of their argument before the committee may best be judged by stating the fact that all the members of the Conference Committee present that night voted for the bill, thus refuting the statement that F. P. Baker defeated the bill. I am convinced that the bill met its defeat at the hands of a certain medicine company, whose headquarters are Keokuk, Iowa, assisted by pretended friends of the measure. This medicine company, known as the Baker Medicine Company, I believe, have been and are now selling medicine from wagons in Kansas. They objected strenuously to section 10, which related to itinerant venders of drugs, nostrums, etc. They are well aware that the passage of that act would decrease their income many thousands of dollars per year. I am informed by an old schoolmate of Eugene Baker's, that they started in some years ago on a small scale, but have become very wealthy. They stated to a gentleman in Topeka that they had forty wagons traveling in Kansas and would be willing to pay \$75 per annum for each wagon, \$3,000 per year—quite a good license you see. But the committee were under obligations to put that bill before the Legislature without such a radical change, for in the bill the license was placed at

\$100 per month. After it was in the hands of the committee we could suggest such changes as we thought best. It was introduced in the House on this basis, but it was changed before it went before the Senate by parties to whom it was intrusted to be introduced. As soon as the bill was adopted at the May meeting this firm was notified of the fact by letter, and during the early days of the session a representative of that firm remained in Topeka at the Copeland Hotel, where it was possible to interview the members. I am also informed that a certain amount of money was demanded of him by parties (not members of the Legislature) to defeat section 10, and these were deeply interested in the adoption of the Illinois law, where this clause remains in force. I am likewise informed that members of the Legislature were invited to visit a certain office to meet either Mr. Baker or his representative. This is heresay, but subsequent events lead me to believe that they were true as they came to me through intimate friends of the bill. I am again informed that Mr. Baker thinks, since the Legislature adjourned, that he was buncoed. As I said above subsequent events lead me to believe that these stories were not groundless, because when members of the Legislature were approached regarding the bill, their first query was, "Does the bill shut out these medicine vendors who sell medicine from wagons throughout the State? If it does I am opposed to it." How solicitous these gentlemen were for the welfare of a firm which does not spend one cent of money in Kansas and on the other hand takes out thousands of dollars a year. How peculiar that these legislators so quickly picked out what was objectionable in the bill. Their attention may have been called to this section by some agent of this medicine company. Even some of our prominent physicians in the State objected to this section and asked that it be cut out, in fact did modify it according to the wishes of this medicine company, and so introduced it in the Senate.

Query: Why should any physician who had the good of the profession at heart desire that such vendors should still be permitted to sell their nostrums to the dear people of Kansas? It would seem to one that perhaps some very great moral suasion was used in their behalf. Be that as it may I leave this to your individual judgment and decision. From the change of side of some of the Populist Senators it was evident that some force was at work to defeat the bill if section 10 was left in. So after due consideration and for the welfare of the bill we decided to modify it so it would meet the approval of these opponents, who were all anxious, or appeared so, to shut out quack doctors, but would not consent to keeping out itinerant vendors. We changed section 10 to read, "Any itinerant doctor who shall open up a transient office, etc., shall pay \$100.00 per month, etc." We now supposed the bill would meet with no more antagonism, but we were sadly mistaken. The House committee made the change at our suggestion, but the Populist members of the Senate committee could not see their way clear to do so and killed the bill without consideration. We almost got down on our knees and implored them to at least report the bill back to the Senate and let it take its place on the calendar, but they would not do so. Dr. E. T. Metcalf, the Chairman, filed a protest against the majority report, and said report appears on the Senate journal. We now saw that medical legislation was killed, but we desired to place the parties on record by their votes, so by hard work and constant attention we succeeded in getting the bill on final passage in the House on Saturday, March 2, 1895, by the following vote:

Ayes—Aker, Allen, Andrews, Barkley, Beekman, Bender, Benefield, Blair, Bone of Clark, Brown of Crawford, Butler, Caldwell, Campbell of Doniphan, Cannon, Chandler, Claycomb, Cox, Cubbison, Dennison, Dickson, Dix, Eckstein, Fitzgerald, Frazer, Funk, Gardenhire, Glenn, Grimes, Goodno, Halliday, Hanna, Hill, Hollenbeak,



Hopkins, Johnson of Anderson, Kelly, Knipe, Lough, McCarthy, Marshall, Mathews, Meridith, Miller of Geary, Miller of Morris, Moore, Mower, Murphy, Painter, Powers, Price, Raemer, Robinson, Rohrbaugh, Satterthwaite, Schyler, Seaton, Sheafor, Simons, Smith of Sherman, Spicknall, Stockbrand, Sutton, Thisler, Tucker, Lobdell.

Noes—Axelton, Baker, Barnett, Brown of Pratt, Bucklin, Byers, Campbell of Stafford, Conger, Cornell, DeWitt, Duffy, Forsythe, Hart, Heminger, Hilton, Ingle, Johnson of Nemaha, Lambert of Lyons, Lupfer, McKnight, Metzler, Moss, Mott, Nighswonger, Pancake, Rothweiler, Sherman, Shouse, Smith of Ottawa, Tucker, Veale, Vilotte, VanGaasbeck, Winters, Wright, Zimmerman.

In this connection I desire to call the attention of the profession to the Hon. F. M. Benefield of Montgomery. At my request he took our bill and championed it, thereby making it possible to at least get a vote on it. Had it not been for his tireless and ceaseless efforts the bill would have died in its infancy, as it was it only lived to middle age. Other members who deserve great credit are Hallenbeak, Hanna, Campbell and Smith, and to them do we owe allegiance. There were a few surprises on the vote, but not many. Mostly all the Representatives who promised to vote for the bill did so. I am pained to say that we were not able to control the votes of two of our Shawnee County Representatives, both Mr. Veale and Mr. Sherman voting against it after saying they would not. Mr. Veale's reason for so doing was because some of the prominent physicians asked him to vote against it. These gentlemen's names were given me but I do not desire to give them publicity, although these parties are prominent members of this Society and of the profession. Their reason could only have been prejudice because parties were working for the bill with whom they were not friendly. Sooner than think that some one whom they

disliked might possibly get some credit should the bill pass, they chose to kill it. Just think of broad-minded men stooping to such tricks to defeat their supposed enemies—thus defeating the wishes of every reputable physician in Kansas!

After the passage of the bill in the House it was at once messaged to the Senate. Under the rules a bill to go on third reading without taking its regular course, requires unanimous consent. When this was asked for by Dr. E. T. Metcalf, Senator Cooke (Pop.) objected, and we then felt that it would die on the calendar, but later Senator Metcalf made another attempt and succeeded in having it placed on third reading. When the bill was called Senator Householder moved that it be stricken from the calendar, which motion prevailed. All the Populists except Senator True voting for it, and the Republicans and Democrats against the motion. To Senator Metcalf is due the entire credit of getting the bill to a vote in the Senate, and had it not been for either the narrow-mindedness or other reasons of the Populist majority the bill would at least have been treated fairly by its being read and discussed and killed on its merits or demerits. But notwithstanding the earnest imploring and eloquent appeal of Dr. Metcalf to the Senate to at least read the bill and see what important changes had been made, they refused to do so. They had not forgotten the promises made early in the session. It was said by a physician before the State Board of Health that the reason the physicians did not take any interest in the bill was because they were not invited. I am sure this gentleman spoke for himself and not for the physicians collectively. I desire to say in reply to that misstatement that they were all invited, as the gentleman will learn if he will kindly look up the circular letter sent out to all the physicians last May. There also appeared in the *Kansas Medical Journal*, January 26, 1895, the following on page 49: "We desire to call the attention of phy-

sicians interested in medical legislation that the bill now needs their attention and hearty support or it may meet with defeat." This was written by myself, and again a prejudiced and malicious falsehood is nailed.

Had not Dr. Guibor, Dr. Ward, myself and one or two others interested ourselves, even neglecting business to do so, the bill would have died in committee, and all the thanks we have gotten is abuse. So ends the story of a medical bill for which so much hard work was done by its friends and a proportionate amount by its enemies, but I am constrained to remark, in closing, that it was murdered in the house of its friends. I trust I have given as true a history of the work of some of the committee as memory permits. I have refrained from personalities, although strongly tempted not to do so, for the sake of harmony and to prevent an uncharitable feeling toward myself by some who are too prone to jump at false conclusions as to the intent of this paper. I would like very much to have named the moral cowards who pretended to me that they were very anxious to have a medical law, but who used the stiletto with the vengeance of a Mexican bandit, who you all know never faces his victims but stabs them in the back.

Dr. D. D. WILSON, M.D., read the following paper on

#### PURPURA HEMORRHAGICA.

In presenting the subject of purpura hemorrhagica, it is not with a hope of offering to this Society any special light upon the subject.

This disease, or, more properly, symptom, has been to me in the last three years a very interesting one, three well marked cases coming under my observation during that time, which I will attempt to report in a brief way later on.

Several different forms of purpura are recognized, but

as this paper is not to be an exhaustive one, I shall try to confine myself to this one form.

The pathology of this condition is as yet very much disputed. And many theories are advanced, none of which are satisfactory; neither will they admit of close investigation.

*First*, we may have certain changes in the blood; *second*, changes in the capillary wall; *third*, disturbances of circulation. Indeed, we must have a change in the normal structure of the capillary wall to allow the escape of the red corpuscles. Arthur Van Harlington, in writing on this subject, says that, "We may look for the origin of hemorrhagic symptoms rather in blood stasis than in an ill understood condition of fluidity of blood, or in a still less clearly understood vascular fragility."

I may be pardoned for introducing, at this point, a theory which may possibly be construed to be either as sensible or as wild as some others advanced.

It is a physiological fact that when the density of blood is increased by an abnormal amount of sodium chloride in the circulation, that the red corpuscles depart from their normal shape and become crenated, or spiked like a chestnut, and more solid and compact.

This being the case, is it not reasonable to conclude that the continual pressure of these roughened corpuscles against the capillary wall would be sufficient to destroy the wall and allow the escape of its contents into the surrounding paravascular spaces? Reasoning then, that the theory here presented may be in some measure correct, we would then say that while the reaction of normal blood is slightly alkaline, that the addition of a great amount of salines—especially the sodium chloride—into the general circulation would produce the change just spoken of in the corpuscle and would therefore be a primary factor in the production of purpura hemorrhagica.

I will now give a brief history of two cases, with treatment and results.

Mrs. H., aged 51; family history, negative. History of patient: Mother of five children; never had any serious sickness, but never was robust and healthy. For five or six days had been complaining of tired feeling and frequent slight fainting spells; some pains in lower limbs, but more of a feeling of weakness and aching than pain; slight headache; no fever.

On the morning of December 22, 1893, while at her daily work, noticed she was not feeling as well as usual, and gums bleeding slightly. She took little notice of this, but it growing worse, washed out her mouth with ice water and held ice in her mouth. Hemorrhage gradually grew worse, until about 5 P. M. I was called. Found the patient very weak, skin dry, and mucous surfaces pale. Patient excessively anemic. Pulse small and feeble. Temperature 97°. Pain and numbness in limbs; the least exertion producing fatigue. Constant oozing of blood from gums.

The hemorrhage, together with a few spots on the face and several prominent ones on the eye-ball, induced me to carefully examine other parts of the body. I found characteristic spots, a few on the hands and arms, a few scattered, and more on the lower limbs. These confirmed my diagnosis, purpura hemorrhagica. The spots appeared as just beneath the skin, dark red, varying in size from a pin head to a split pea, unchanged by pressure.

These spots disappeared in a few days, but others appeared, and for several weeks kept gradually decreasing in number until after the patient was able to be around the house again. I could find a few scattered over the lower limbs. To-day the patient is to all appearances enjoying good health.

The hemorrhage was difficult to control for the first twenty-four to thirty-six hours, but the liberal use of ergotine controlled it and no more difficulty was experienced from that source.

Case 2. Mrs. R., aged 37; married; mother of five children, youngest six years of age. On account of some pelvic trouble had ovaries removed in September, 1893. Previous to that time, general health poor, badly nourished, anemic. After operation, general health somewhat improved; very nervous; unable to sleep without some sedative; appetite variable.

On January 17, 1895, called at my office, complaining, as she said, of a peculiar smothering sensation, some pain in chest; tongue coated; temperature 101°; bowels had not moved for forty-eight hours.

Gave her four grains of calomel in two doses; quinine and antikamnia. On evening of same day I was hastily called to see her. Found her lying on the floor, garments and carpet covered with blood. Husband stated that about twenty minutes previous to this time her bowels had moved, the stool being over half blood. She went to bed feeling faint and weak. A few moments later she again arose for the purpose of evacuating the bowels. During this operation she suddenly began to vomit great quantities of clotted blood. I arrived a moment later and found her as before stated. Pulse hardly perceptible.

I immediately gave her some stimulants, and hypodermically one grain of ergotine. In about ten minutes she again vomited a similar quantity of blood. I was unable to satisfy myself of the origin of the blood, but waited for developments. In a short time she rallied somewhat, and I then gave her one-half grain more of ergotine.

After waiting one-half hour, patient said she felt very comfortable. I left, returning in the morning. The patient said she was feeling stronger; had slept two hours; vomited a small amount of blood once during the night. Pulse 96, stronger; temperature, 99°.

On examination numerous irregular dark colored spots were found scattered over limbs. Diagnosis, purpura hemorrhagica. Continued ergotine in smaller doses by stomach; also tr. ferri chlor. fifteen drops three times.

daily. On second day, took some light nourishment, and at the end of a week was able to sit up. Temperature most of the time being sub-normal. Treatment continued for two weeks with the addition of ten drops of nitro mur. acid diluted, three times daily. Patient gradually grew stronger. Nutrition better, until at the present time she is in much the same condition as before the attack, except that at times she notices slight oozing of blood from the gums and that spots still appear over different parts of the body.

## DISCUSSION.

Dr. BLACK: The doctor has presented the subject so fully that there is not much that I can say in discussion. I believe, however, that many people think it true that it is not so much a condition of the blood itself, as it is a condition of the wall of the blood vessels which causes purpura hemorrhagica; there must be a weakened condition of the whole of the blood vessel.

Dr. WILSON closed the discussion: I have very little further to say on this subject. I am still of the opinion that it is not primarily due to change in the wall of the vessel; certainly, change occurs later, but not in the first instance. The literature on the subject, as I have said before, is very scanty and a great many theories, none of which are very satisfactory, have been advanced. Of course there is a change in the wall itself which allows the corpuscles to escape through the capillaries. The capillary being made up of endothelial cells glued together, or joined together, there must be a change in the wall to allow the escape of the red corpuscles, and the only thought I have presented in this paper is the roughened condition of the corpuscles and the way they escape through the wall of the vessel; being roughened on account of this change produced by the excessive amount of saline matter in the blood.

Dr. H. M. OCHILTREE read the following paper on

COMMON SENSE VS. TRUE AND FALSE HYPNOTISM.

The peculiar mental state into which some individuals can voluntarily place themselves, familiarly known now as hypnotism, has been recognized by some of the earliest writers, and existed several thousand years ago among the Persian Magi, as well as up to the present day among Indian Yogis and Fakirs. The means used by the Persian Magi and Egyptian sorcerers to induce the hypnotic state, was the same as that made use of today: fixation of gaze at some object.

The belief has perhaps always existed, that particular individuals could influence others by the exercise of certain powers that could be used for good or evil, as in the cure by the royal touch in the Middle Ages, and the theory of sorcery and witchcraft.

Toward the end of the Middle Ages a system presents itself, which was developed out of the doctrine of astrology, that not only did the stars influence men, but that men also mentally influenced each other.

The Scotchman Maxwell, about 1600, assumed a vital spirit of the universe, and this vital spirit seems to be the same thing which Mesmer calls the universal or magnetic fluid.

Although the foundation of animal magnetism was thus laid, universal attention was first drawn to it by Mesmer, a Viennese doctor. His theories were discussed by the Paris Academy of Medicine in 1840, and they found that the magnetic fluid had no existence. They did not deny that great effects were produced by the imagination. In 1814 the Abbe Faria showed by experiment that no unknown force was necessary in the production of the phenomena; the cause of the sleep, he said, was in the person to be sent to sleep. In 1814 Braid showed that the phenomena could be obtained by carefully fixing the eyes upon any object; and Grimes, an American, inde-



pendently of Braid, obtained like results from a similar method.

The belief that one person can influence another except by acting upon the imagination has been discarded by all scientific men. "A direct mesmeric influence is a myth in opposition to all physiological knowledge."

The childish things believed in by our ancestors in regard to animal magnetism, have been put away by the "common sense" of the present generation, and we now know that the peculiar mental state in which we find the phenomena of hypnotism is wholly the result of an excited imagination, and self-induced, either by auto-suggestion, or by the suggestion of an operator in sensitive subjects.

Admitting the hypnotic phenomenon, we will define what it is, notice briefly its different phases, and attempt to show who are susceptible to its effects.

"Hypnotism is a morbid mental state characterized by: (1) perversion or suspension of consciousness; (2) abeyance of volition; (3) automatic response to command or external sense impressions; (4) intense concentration of nervous force in some particular direction." Let us now notice briefly its different phases.

We will find in the history of somnambulism, trance, catalepsy and ecstasy, all the phenomena described in the above definition. Somnambulism and hypnotism are used synonymously, and authors state that it is a condition similar to hypnotism, and can be induced artificially.

Trance, hypnotism, and mesmerism are used synonymously, or artificially. Catalepsy is regarded as a simple neurosis, and a symptomatic manifestation common to several nervous affections, notably hysteria, somnambulism, hypnotism, trance and ecstasy, which have been known to succeed each other, turn by turn, in the same subject, and may be produced artificially in subjects predisposed.

The condition of ecstasy is evidently only another of

the protean manifestations of the hypnotic state. States of ecstasy occur in the self-mesmerized, also in hysteria.

This state may be voluntarily induced, and artificial ecstasy may be produced at will in those sensitive to hypnotic attacks.

Who are susceptible to its effects? Being a morbid, nervous phenomenon, it will only occur in the degenerate, hysterical and neurasthenical, and in healthy persons, who from transient cause such as illness, exhaustion, or any mental shock, have been temporarily weakened.

We find that a condition of morbid sensitiveness underlies somnambulism, and that trance occurs in the hysterical, those of sensitive nervous organization, of deficient education, and weak will power; and that catalepsy is common to several nervous affections, notably hysteria, somnambulism and ecstasy; and that ecstasy occurs in persons of a neurotic temperament, of narrow intelligence, of emotional disposition. The predisposition to these states may be latent, and may be developed by persistent efforts to hypnotize.

In the morbid mental states described will be found the phenomena of true hypnotism, whether spontaneously or artificially produced. Many authors rightfully assert that the production of hypnotism is injurious, that it is apt to produce evil effects on the organism, and that it especially favors and develops tendencies to hysteria. The identity of the true hypnotic phenomena, and the states described, would favor that conclusion.

Dr. Hart, who is said to be a very impartial writer on this subject, admits the hypnotic condition, and declares that its practice, except by skilled physicians, should be forbidden, and affirms its therapeutic uselessness.

Many authors also assert that the hypnotic state produces no evil effects, and that the majority are susceptible to its influence, and that the neurotic element is not necessary in its production. This contradiction of state-

ments arises from the different theories of what the true hypnotic state is.

We will now endeavor to illustrate the phenomena of false or feigned hypnotism: Dr. Moll, in illustrating the effects, takes a young man of twenty, gives him a button to look at and in three minutes he cannot open his eyes or unclasp his hands. He remembers all the doctor said. In a second experiment, on a woman of fifty-three, he hypnotizes her in ten minutes, and she cannot open her eyes; her arm when raised remains in the air; and when told that she cannot drop her arm, is unable to do so. She cannot pronounce her own name when assured she is dumb. He awakens her by reverse passes. In a third experiment, he requests a boy of sixteen to look him straight in the eye, and after a short time he draws him along by the hand, their eyes remaining fixed on each other. He raises his right arm, the boy does the same; the left arm, and the boy does the same; he causes him to kneel down, but he cannot rise as long as he looks at him; when he ceases to look at him the charm is broken.

In a fourth experiment, a man forty-one years old is told to go to sleep, and he makes the usual suggestion. He tells him he cannot open his eyes, and he fails to do so. He lifts his arm, and it remains in the air. The doctor asks him if he is fast asleep, and he says "Yes." "Do you hear the canary singing?" "Yes." "Now you hear the concert?" "Certainly." He takes a black cloth and puts it in his hand, and says: "You feel this dog quite plainly?" "Quite plainly." He arouses him by saying "wake up," and he says he only remembers going to sleep; of what happened during sleep he knows nothing.

Dr. Moll says that hypnosis is the state in which the subjects were thrown in the above experiments, and that "if a suggestion takes effect, from the point of view of hypnotism the subject is under the influence of suggestion." I have quoted four of the different methods of

inducing hypnosis, out of about twenty, and have given examples of what many authorities now believe to be a hypnotic state, and in which almost any absurd suggestion will frequently be complied with. In these cases we have good grounds for questioning any mysterious phenomena, and are justified in believing that deceit has been practiced by the subjects. It appears to me that the educated common sense of today cannot be asked to believe the absurd actions and statements of the subjects to be due to hypnotic influence, but due rather to the natural, and in many instances mischievous, desire to act out the suggestion of the operator. Dr. Earnest Hart, writing in the October *Century* of 1894, dwells at length upon what he terms the "eternal gullibility" of humanity. His conclusions are mainly drawn from the confession of one individual who simulated the hypnotic state in public for the purpose of obtaining money.

My conclusions are drawn from an interview with forty intelligent individuals who submitted to the hypnotic experiment, and who acted in every respect in accordance with the teachings of all hypnotists from Braid to Moll. The operators believed they were thoroughly hypnotized, as also did the spectators at the public and private seance, yet not one was under the influence. The credibility of these witnesses cannot be questioned.

In 1874 I saw a young man at a public exhibition act upon the suggestions of the operator in such a perfect manner that the audience believed him to be thoroughly hypnotized, and he stated afterward that he had no remembrance what he did. I inquired of him as to his true condition, and he finally confessed to me that he was under no influence whatever but his own will, and that he had agreed with the operator to take a leading part.

In 1894 a well known hypnotist attempted to give a public exhibition in my town, but failed completely. The subjects did not work well, and persisted in opening

their eyes, unclasping their hands and lowering their arms, etc., even when they were told they could not, to the great discomfiture of the operator.

I submitted to an operator in order to test the effect by a personal experience. He held a bright light close to my eyes and commanded me to sleep. I slept, apparently, and yielded to every suggestion that was made, yet I was under no influence whatever but my own will, and could obey or disobey any suggestion at pleasure.

At a private entertainment a number of business men, and several ladies, yielded to the subtle power, and performed their parts in a creditable manner, yet claimed they were not hypnotized. At a public exhibition when subjects were called for, a number of the business men and also several ladies went upon the stage, submitted to hypnosis, acted their part and in the midst of one of the most characteristic hypnotic performances, while the professor's face was wreathed in satisfactory smiles, all, at a given signal, walked off the stage. It would be hard to imagine the consternation of the professor(?), and when an explanation was called for, he mumbled something about taking his mind off of them. I do not doubt that all of these subjects were as thoroughly hypnotized as any of Dr. Moll's.

In a public lecture on hypnotism I attempted to demonstrate the error of the position assumed by many authors to be the hypnotic state. I practically illustrated the different methods of inducing hypnosis, and had over twenty subjects at one time apparently hypnotized.

The experiments of Dr. Moll, and Dr. Cocke, the two latest authorities on the subject, and also the experiments of other reputable authorities, were faithfully performed, and the entire audience was satisfied that the hypnotic phenomena was as genuine as any that had been previously witnessed. I have carefully inquired of over forty subjects that were apparently under hypnotic influence as to their mental state at the time, and all but

two positively declared that they were under no influence whatever but their own desires to play a part. Of the two who professed hypnosis, both refused to act certain parts that were disagreeable to them, thus proving that they were acting at pleasure.

Dr. Moll, on page 78, says: "One of the best known features in hypnosis is rigidity of the whole body. There is sometimes a complete tonic contracture of nearly all the voluntary muscles, through which the head, neck, trunk and legs become as stiff as a board. A well known experiment can be carried out in this state; the head can be placed on one chair and the feet on another, and the body will not double up. A heavy weight, that of a man, for example, may even be placed upon the body without bending it. It is not astonishing, after what I have said of the effect of mesmeric passes, that this stiffening should be more easily induced by their means. It cannot always be induced by mere verbal suggestion. A command, or a sign from the experimenter generally suffices to put an end to the rigidity." The only thing astonishing about this statement is that Dr. Moll should think it is "one of the best known features in hypnosis," and that "it cannot always be induced by mere verbal suggestion," but "requires mesmeric passes."

I had medium-sized men, without mesmeric passes, placed in the position Dr. Moll requires, and one held up a weight of 600 pounds; another, a weight of 500 pounds, and a thirteen-year-old boy, who only weighed 107 pounds, held up 300 pounds. In this experiment I agree with Dr. Moll's statement in one particular, that a "command or sign generally sufficed to put an end to the rigidity." They were all glad to relax. I wish to call attention to the fallacy of Dr. Carpenter's statement on page 128, of "Mesmerism, Spiritualism, etc.," and page 606 of his "Mental Physiology," in which the following statement occurs of hypnotic phenomena: "It was by the artificial induction of a like state of concentrated

effort, coupled with the assurance of easy success ('It will go up like a feather'), with which he had completely possessed his subject's mind, that Mr. Braid, in my presence, enabled a man so remarkable for the poverty of his physique that he had not for many years ventured to lift a weight of twenty pounds, to take up a weight of twenty-eight pounds on his little finger, and swing it around his head with the greatest apparent ease. Neither Mr. Braid nor his son, both of them powerful men, could do anything like this, and I could not myself lift the same weight on my little finger to more than half my own height. Trickery in this case was obviously impossible."

After reading this statement I tried this feat, and easily performed it. I had twenty men, none hypnotized, many of them only medium sized, and some past the prime of life and of such poor physical development that I doubted very much their ability to perform the feat, try it, and all easily performed it. I assured one that he could not lift the weight of a handkerchief, and he failed to do so after persistent effort. I then assured him he could swing the twenty-eight pounds around his head on his little finger, and he easily did so. Almost twice the weight, fifty-two pounds, was then swung around the head on the little finger by three men, none of them athletes. One of the three was a small man, and I had doubted his ability to swing the twenty-eight pounds, as he did not have the appearance of a man of even average strength; but to my surprise he handled, in the same manner, the fifty-two pounds. None of these men were gymnasts, and not one had ever before attempted this feat. The inquiry naturally arises, if the Englishmen, Dr. Braid and his son, were both powerful men, and could not perform this feat, what adjective would Dr. Carpenter use to express the strength of our Kansas boys? A common-sense process of reasoning would cause us to infer that, as he was very much mistaken in

his conclusions in the one case, he was also mistaken in the other, and that there was no hypnotism about it, but a simple feat that almost any one can perform. I demonstrated that dull hat pins could be run through the flesh without hypnosis, and apparently without pain. This simple operation is usually made use of by traveling hypnotists as a climax and the most convincing of their experiments.

In the recognition of pictures on cards by supposed hypnotic subjects, there is always an understanding between operator and subject, and the tricks of the juggler made use of to deceive the public. So also is the so-called muscle reading, or finding small objects while apparently blindfolded, I say apparently blindfolded. I have watched these men operate, and my opinion is that the handkerchief is always placed so that they can see. Let all incredulous physicians request permission to blindfold the operator, and my opinion is that he will fail.

Dr. Carpenter, in writing on metamorphoses of personality in the hypnotic state, says: "So again, the loss of sense of personal identity or the actual change of personality, which the biological operator asserts that he is able to induce, and of which the writer has seen some very amusing and (he is satisfied) genuine cases, the mind not being able by any effort of its own to escape from the idea thus forced upon it. Mr. A. is repeatedly assured that he is Mrs. B., or Mrs. C. is made to believe she is Dr. D. The metamorphosis is usually complete when made, and nothing can be more remarkable than the assumption of the tone, manner, habits of thought, forms of expression, and other characteristic peculiarities of the individual whose personality the 'subject' has been made to assume." He goes on to say that "not by any means are all biologized 'subjects' capable of being thus affected."

Dr. Carpenter asserts that the common sense of the individual does not detect the absurd perversion. How long



would it take Mr. A. to find out that he is not Mrs. B.? or Mrs. C. that she is not Dr. D.? Is it not common sense to presume that these subjects had a slight proclivity to deceit, and that they enjoyed taking in, perhaps, older and wiser people?

Is there anything more extraordinary about this acting than is commonly observed by every physician of large experience, in which they have been imposed upon by patients feigning disease, deceiving both medical attendant and friends? Can we not find metamorphosis of personality every day upon the stage?

I had two young men illustrate metamorphosis of personality. And the voice, gesture and manner so completely represented two different and well known individuals that almost the entire audience recognized the character represented.

Would it be reasonable, from a common sense point of view, to believe that Dr. Carpenter's subjects were hypnotized, when the same thing can be done without hypnosis?

Those practising and professing hypnotism are usually honest in their belief of its effects, but all writers on the subject are agreed that it is hard to tell, in many instances, where deceit begins and ends. By considering the states first mentioned, in order to guard as much as possible against all sources of fallacy, as only illustrating the true hypnotic state, it will be more easily diagnosed, and much confusion avoided. That a man does not open his eyes, or unclasp his hands, or lower his arms, when he is told that he cannot, does not prove that he cannot do so. Common sense would say, when he fails, that it is a very plain case of pretense. When one pretends that his clothing is on fire, or that he is fishing, or that he sees any object represented to him, it does not prove that he is under any mysterious influence, but from a common sense point of view proves that he is willing for the time to assume the role of an actor. We would

rather trust our sense than our senses. "The conjurer can pour out scores of glasses of different kinds of wine from a single bottle, but we know he must do this from a larger store, which he dexterously conceals from view."

And while many operators honestly claim to produce the hypnotic effect, and many subjects claim to have been hypnotized, we have a right to reject the most truthful and honest witnesses as to asserted phenomena, which are in opposition to the plain rules of common sense. We have a right to assume that the parties have been acting until the contrary is positively proven.

Hypnotism has been called by some "suggestion." It is absurd to assume any relation. Suggestion runs through every hour of our existence. It begins with conception and ends only with death. It has been used since the creation of Adam to the present moment by the layman and the physician.

From the foundation of medicine up to our present time, suggestion, *i. e.*, the influence of the physician on his patient, has played, and always will play, a considerable role in the result of the treatment which he orders. It is a fact that certain beings have influence over their fellows; but it is a normal influence, which only attains its highest stage of development with physicians when there is implicit confidence between patient and physician.

"As we travel along through life's journey we catch a strain from a whistling schoolboy, and straightway we are among the scenes of our childhood. Or it is the buzz of a droning housefly that sits us at our father's fireside again after the lapse of long years; we do not notice the little creature, but it is he that has set before us once more the sainted image of him or her from whom we have drawn so much of our best incentives. We have ever playing about us unnoticed commonplaces, which are in effect the healers and helpers, the quickeners, the strength and joy of the hours and years. Dull, humdrum and mechanical indeed would existence be

without these involuntary associations and suggestions, coming we scarcely know whence, going we hardly divine whither." As Wadsworth to the butterfly—

"Stay near me, do not take thy flight;

A little longer stay in sight!

Much converse do I find in thee,

Historian of my Infancy.

"Float near me; do not yet depart!

Dead times revive in thee;

Thou bring'st, gay creature as thou art,

A solemn image to my heart—my father's family."

In preparing this article I have consulted the following works: Mental Phys., Carpenter; Mesmerism, Spiritualism, etc., Carpenter; Ref. Hand. Med. Science, Epidemic Delusions, A. N. Craft, A.M., Annual 1892, 1893, 1894; Moll on Hypnotism; Dr. Cocke on Hypnotism.

#### DISCUSSION.

DR. SEXTON opened the discussion: I was very much interested in the doctor's paper; but I was not expecting to be called up to open the discussion, and consequently have but little to say. I may say that I was completely surprised by the paper. I rather expected it to be upon radical lines; to take some peculiar views on the subject, but it is so permeated with common sense that it meets my heartiest approbation. The influence of hypnotism upon disease, as the doctor says, is an influence which has been exerted through all the ages of medicine, though not always well recognized. It is an influence which I believe has been more thoroughly appreciated and more skillfully manipulated by the charlatan than by the professional man. The influence of suggestion in the curing of disease can scarcely be over-estimated, but when we attribute to that suggestion some mysterious, magnetic force going out from one individual to another, we are departing, as the doctor says, from the realm of science, and are giving to hypnotism an importance which I believe the facts will never warrant. There are

innumerable instances in which remarkable cures have been effected under the influence of suggestion. We are all coming to recognize this more and more. The frequent remark of patients that "when doctor so and so comes to treat me, I feel better the moment he enters the house" illustrates the point. Amplification of this point is found in the cures of Christian science. That patients do recover from obstinate illnesses under the influences of Christian science I think there can be no doubt, and for my own part I am perfectly willing to concede the point, and I believe it to be due altogether to the suggestion of hypnotism. A point in the doctor's paper which interested me very much was his allusion to auto-suggestion. I believe that a great deal that we see in life of peculiar actions, of singular beliefs, of delusions taking possession of people, of the hidden mainsprings of people's lives is the result of auto-suggestion. I think we all meet with a great many cases where we were unable to analyze or comprehend the actions of individuals which might, in a great measure at least, be explained by auto-suggestion. I was particularly pleased with the doctor's expose of the deceit which is practiced in the e so-called hypnotic experiments. It reveals a phase, a disposition of human nature, which is almost incredible to one who does not study human nature closely. The willingness to act a part, to deceive others, is very widespread indeed. We can scarcely understand how many of our fellow creatures are willing to get up before an audience and pose in any role which may be assigned to them; to become pretenders; giving themselves to the deceit with so much alacrity that I think they really believe themselves at times that they are acting under the influence of some mysterious force, when, as a matter of fact, they are acting entirely under their own will power. I would not take from hypnotism anything that it may lawfully claim from a scientific standpoint; but I would have it

put upon a basis of utility; I would have its phenomena clearly understood and appreciated; I would have all the features of mysticism with which the world has been prone to surround it swept away, and leave it upon a basis of science and common sense. Handling it in this way, it is a useful therapeutic measure. Looking at it from this standpoint, we may use it without fear of base uses being made of it; without fear of reproach. There is another point, a disputed point, that the doctor spoke of—whether the weak and nervous are more susceptible to hypnotic influence than the strong and virile. My own experience leads me to most emphatically believe that they are. An impressionable and emotional nature is very much more easily influenced than an unimpressionable and unemotional character; the more credulous the subject, the more readily he yields to the hypnotic influence. Take the ignorant, the credulous, the hysterical, and unquestionably they yield more readily to hypnotism. Much good can be accomplished by it, and I think we are warranted in using hypnotism very much more than we have been in the habit of doing.

Dr. HAYES: If we mean to stop and consider everything that men believe in regard to this or any other subject, we will have to adjourn this section and give place to the Fourth of July. I was interested in this paper, and the only objection I have got to it is that it assumes to settle the question. The question is settled and the paper is merely a magazine article of more or less ability. Now, if, as the gentleman last on the floor said, there has been one authenticated case of cure by Christian science, I have no knowledge or report of it; that there are imaginary evils relieved by it, diseased minds and notions cleared up, by it, is a matter of everyday observation; but no genuine cure of actual disease by Christian science or by hypnotism, has yet come to the knowledge of the profession.

Dr. LORTRIDGE: The author this of paper seems to try to

disarm this audience of the possibility of proving anything contrary to his views; he would have us believe that any man or set of men who undertake to hold up the other side of the argument are numbskulls. If there is no truth in anything, then there may not be any truth in hypnotism; but if there is truth in anything, there must be truth in hypnotism. I suppose the gentleman measures other people's honesty by his own; he may find men who will act in concert with him to deceive others, but others will arrive at the same results without deceit. I tell you that there is a power which comes to the aid of the man who will lie quietly when his leg is being amputated and feel no pain; there must be something besides collusion between the hypnotiser and the hypnotised.

Dr. LANE: I am very glad that the doctor has presented this paper and that he has taken such a sensible view of the subject. Now, I am quite sure, Mr. President, and ladies and gentlemen, that the busy physician is most easily duped. You take a conjuror and let him do some simple trick before us; we do not see through it, and we think it mysterious. Tricks, puzzles, acts of legerdemain, clairvoyance, hypnosis, and all these things that border on the wonderful or mysterious, are apt to mystify us until we take time to investigate and understand them. This state of hypnotism, whether it be simply collusion with some performer, or whether it be actual and genuine, is one which the busy physician has not time to investigate. It was only a few days ago that the natives at Kansas City were startled by seeing a man driving wildly through the streets with the chief of the fire department on the seat with him, his eyes blindfold, turning abrupt corners, tearing down steep declivities at a breakneck speed with perfect safety. He sat beside the chief and his wrists were wired to the chief's. The busy physician did not read and think of this; he did not stop to think that the chief of the fire department did not want his neck broken, and while his mind was

on where he was going he forgot that he was guiding the performer to the place he wanted to go. A few years ago there was a wonderful electric girl traveling over this country. I mention this, Mr. Chairman, because I think it is pertinent to the subject, and because it illustrates my idea better than I can express it otherwise. Houses were packed for several nights in cities of this size; I presume she was in this town. Her name was Lena Low, as I remember it. She was only fourteen years old, and she could carry a heavy man around at arm's length; she would twist sticks in two, and push powerful men around on the platform as she pleased. She was placed in the hypnotic state and blindfolded. Now, all this was mysterious and puzzling. The manager said, "Come up yourself and see for yourself, and be satisfied that she can do this. Select any object you wish and hide it and she will find it." So she did; but the parties who led her to this secreted object did not know that they were thinking of that object, and in doing so, unconsciously pushed and guided her right to the object. I had the good fortune to expose this trick, and offered to bet the manager that I could reproduce any trick that she performed in half an hour's training. Now, the physician does not ordinarily stop to investigate apparent phenomena that partake of the mysterious; that partake of quackery, such as the hypnotic state, these states of clairvoyance, and of mesmerism that border on the mysterious; these so called spiritual manifestations. He does not usually stop to investigate. You may take one skilled in handling playing cards, and he would mystify this audience and do what seems to us impossible, just as readily as the professional hypnotist mystifies us by his performances. You haven't investigated; there is the trouble, and I am glad that the doctor has brought this paper before us. It is a psychological question, and psychology is the next thing higher than physiology. Mind, and the modifications of mind, cer-

tainly come within the domain of the physician, and it is our duty to investigate and understand them. I would like to state one more instance, Mr. President, where the hypnotic state was made use of in promoting the effect of a spiritualistic seance. A beautiful young lady was to appear, I think it was, dematerialized. A committee of citizens were selected to tie this beautiful young lady in a dark cabinet, and she was to appear before them dematerialized. A druggist of my city, two army officers and myself tied this young girl securely in the cabinet; she appeared dematerialized and the people were pleased, and expected to return the next night. The lights were turned down, the committee was asked to step off the stage, but I stepped back and walked to that cabinet and watched her and saw her dematerialize herself. We had tied her with a cord in a half dozen strong knots to the wall of the cabinet, and she unfastened the entire back wall of the cabinet and made a bustle of it and appeared dematerialized. That was some years ago, when bustles were more in vogue than they are now. I stepped to the stage and stated this fact to the audience and said that so far as it was a scientific exhibition I was willing to act as a member of the committee, but so far as it was a fraud, I declined to act any further. This performance was to have been repeated for one week in Leavenworth, but the next morning the performer was gone. Now, notwithstanding these instances, which were clearly frauds, there is undoubtedly something in this mental state which I should like to have the doctor explain. The ability of some physicians to operate on patients without producing pain, demonstrates conclusively that there is a peculiar mental state which one may produce in another. You take a man with sore eyes, with very irritable eyes; one physician will open them and examine them with the utmost freedom and not hurt him, while he will shrink at the mere approach of another physician. In Charcot's



clinics men were operated upon without an anæsthetic, and certainly without pain. I hope the doctor will explain these things, how these states are produced; that they are produced, I have no doubt, but I believe that when they are investigated, much that now seems mysterious and supernatural will disappear. There is a peculiar relation between mind and mind that I will acknowledge. If I mention to this audience, suggest to them the slicing of onions, and ask them to think about paring onions in slices, water will begin to run from their eyes; get them to thinking about it, and there is no question that water will flow from their eyes. If I suggest to this audience the idea of yawning and get them to thinking about it, I can produce in a large percentage of this audience a desire to yawn. There is no doubt I could probably hypnotize some of you.

Dr. EMORY LANPHEAR: It is unfortunate, indeed, for the cause of true science, that we cannot divest ourselves of the association of such instances as Dr. Lane cited from true hypnotism. They have nothing to do with pure physiological hypnotism, which certainly does exist. There are numerous fallacies in the public mind, aye, in the minds of many physicians, connected with this important subject, important from a physiological standpoint. In the first place, we must divest ourselves in the consideration of this subject of the thought that there is such a thing as thought transference; it is an utter impossibility to convey thought from one person to another. *Second*, We must disassociate true hypnotism from muscle reading, which explains the apparently unexplainable phenomena of such pretended hypnotists as Johnstone. *Third*, We must remember that the hypnotic influence cannot be produced at a distance. *Fourth*, We cannot overcome the laws of nature. We are taught by the necromancers that by hypnosis we can overcome the laws of nature. Utterly impossible! A man who cannot lift 300 pounds when he is awake cannot lift 300

pounds when he is asleep. We must, therefore, divest our minds of the idea that men can do in the hypnotic state what they cannot do in their sound senses. Now, *fifth*, We cannot hypnotize people against their will. If a man oppose his will to hypnosis, it is utterly impossible to hypnotize him. *Sixth*, We cannot overcome the conscientious scruples which a man may have and make him do in the hypnotic state something which he knows is wrong. Now, these are the six laws of true hypnosis which we should always bear in mind, and all these other things which Dr. Lane has mentioned have nothing to do with true hypnosis. But there are cases in which hypnotism can be produced and good therapeutic results obtained. I do not counsel you to do it in your practice; I would not do it except occasionally as an experimental matter; an experimental investigation. For example, I have a lady upon whom I operated for ectopic pregnancy. Following the operation she had great pain from causes which it is not necessary to state. This woman could not take morphine; she could not take bromide and she must sleep. I knew from previous experience with the patient that I could hypnotize her; I had done it repeatedly. Therefore, in the evening at the proper hour, I would go to this woman and by simply passing my hands before her eyes she would go to sleep; she would go into the hypnotic state when I would suggest that she slept; as a consequence of the suggestion she would do it, and wake the next morning completely refreshed. Again, in a case which I saw at Chillicothe, Missouri, but with which I had nothing to do, one in which the disease could not be corrected with medicinal agents, Dr. Adams of Kansas City, hypnotized the patient—a young girl—on Monday morning and said to her while in the state in which suggestion is received: "You will not jerk any more until tomorrow morning at 8 o'clock; at 9 o'clock, I will put you to sleep again." At the appointed time, the trouble returned, and at 9 o'clock he hypnotized her

again, and said to her: "Two days from now when I am gone, you will receive a letter from me upon the train which reaches your place at 9 o'clock; upon opening that letter, you will go to sleep and when you awaken from that sleep you will not jerk any more for a week, at the end of that time you will get another letter from me; you will go to sleep and when you awaken, you will never jerk any more"; the result of the case shows that was exactly what happened.

Dr. OCHILTREE closed the discussion: I will not detain you by any lengthy remarks. I do not dispute that hypnotic phenomena occur, but I wish to separate the true from the false. I believe that the phenomena occur only in those of hysterical temperament or of degenerated constitution. I believe that only such persons can be hypnotized. The individual that Dr. Lamphear mentioned was a neurotic, was he not, doctor?

Dr. LAMPHEAR: Yes; they nearly all are.

Dr. OCHILTREE: I believe that is the generally accepted opinion today, although it is claimed that anyone who will yield can be hypnotized; but it is not hypnotism, it is nothing but normal suggestion. Now, I do not deny the influence of suggestion. Almost every physician within the sound of my voice has produced remarkable results by the influence of suggestion alone. Perhaps you have had patients who have come to you and said they were sick; you have looked them over and have said, "There is nothing wrong with you; get up," and they have obeyed the suggestion. I have had patients get up and walk after they had been hauled in from the country in a bed. Now, in regard to operations without pain, I would say that at this public entertainment I called for volunteers, I said to them, "I am going to run this dull hat pin through your flesh; come forward." Some individuals came forward and I took a dull hat pin and ran it through the arm above the elbow and they manifested no pain whatever. Others came forward upon the plat-

form; I did the same thing with them and they declared that they felt no pain. Dr. Lane asked me why certain physicians can operate without pain. I don't know just why one individual can influence another; but it is a normal influence that we have. It is a God-given gift; we must have it to succeed in our business. If all men went to one man, he would do the business, perhaps, but he would be run to death. One man can influence one man, but not another; I might run a needle through your flesh, but another physician who tried it would produce the acutest pain. It is confidence in the physician; it is the belief that whatever he says is true, that whatever he professes to do he can do. A physician has more influence, normally, over his patient than he has any idea of. In some patients, the confidence in their physician is so great that almost any absurd suggestion will be carried out; if the patient be asked to stand on his head in the corner so many minutes he will do it. Now, if I have succeeded in arousing a little investigation of this subject, I shall feel very well satisfied. I wish to emphasize this proposition: That the course of reasoning of those who take this mysterious view of hypnotism is this: If it isn't hypnotism, what is it? We don't know; therefore it is hypnotism; if it isn't mesmerism, what is it? We don't know, therefore, it is mesmerism. The man who adopts this absurd course of reasoning will readily believe in the truth of mesmeric phenomena; but it proves nothing. We cannot always believe our senses, but we can always rely on our senses; common sense will show us that certain things cannot be good; let us therefore investigate. Now, in regard to the spiritualistic phenomena that Dr. Lane spoke of: Every one of these spiritualists who operate in the trance state are hypnotized; it is auto-hypnosis. I believe that hypnosis is a morbid state, and when induced the individual is in a morbid condition and not a healthy state, and that it should be forbidden on that ground; but do not let us confound the true phe-

nomena with the false. Let us distinguish between normal suggestion and hypnotic suggestion; every physician of experience knows that it is normal suggestion and not hypnotic suggestion that produces the therapeutic effect.

Section adjourned.



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# GYNECOLOGY AND OBSTETRICS.

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MARY GAGE DAY, M.D.,  
*Chairman.*

J. T. AXTELL, M.D.,  
*Secretary.*

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## GYNECOLOGY AND OBSTETRICS.

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The Section of Gynecology and Obstetrics was convened; in the absence of the Chairman, Mary Gage Day, M.D., Ida C. Barnes, A.M., M.D., was appointed Chairman *pro tem*.

An election of officers for the ensuing year was held, resulting in the election of Dr. Gardner, of Emporia, as Chairman; and Dr. Marner, of Marion, as Secretary.

Dr. H. G. WELSH delivered the following address on

### A CASE OF HYSTERECTOMY.

I will not go into the ætiology and pathology of fibroid tumors of the uterus, but will content myself with the history of, and the mode of operation employed in my first case of hysterectomy for a large, sub-mucous and interstitial fibroid, weighing about four pounds.

Mrs. H., of Raymond, Kas., aged 49½ years, had given birth to thirteen children at term and had one miscarriage. About two years before the operation she had had a small polypus removed from the cervix, and six months later, began to be troubled with menorrhagia; and only a year before did she notice any enlargement of the uterus. From this time on the tumor grew rapidly and the symptoms became more aggravated; and when I saw her for the first time on January 31st, she was flowing profusely. Menstruation, if such it could be called, seemed to be quite regular, coming on every four weeks, but lasting for two and one-half to three weeks. In fact

she was compelled to keep her bed nearly all the time, as she was so reduced in strength at the end of the menstruation, that she barely recuperated sufficiently to be up till menstruation set in again.

As stated above, I saw her for the first time on the 31st of January, and about midnight, when I was called to relieve her of a dangerous hemorrhage.

She was very weak from loss of blood, and after a very careful examination, I found a smooth uterus reaching nearly to the umbilicus, resembling very much a six months' pregnancy; the cervical canal was large enough for me to introduce my finger beyond the internal os, and as I could discover nothing with my finger, I explored the cavity of the uterus with a sound and found it contained nothing, and seemed as smooth as the external part of the body. I then concluded that I had a fibroid to deal with, and packed the uterus with iodoform gauze, tamponed the vagina and gave ergot; left directions that the gauze be removed in 24 to 48 hours, and that the ergot be given in teaspoonful doses as the case required. This treatment gave immediate relief, as far as the hemorrhage was concerned. I saw the patient again in four weeks when she was again menstruating, but not flowing profusely, as during the previous month; owing, I think, to the influence of the ergot; however, the tumor was larger, and I advised that an operation be done for her relief.

On the 7th of March she came to my office, when I had an opportunity for the first time to examine her when she was not flowing. The tumor was without doubt larger than at the last examination. I called in my friend, Dr. Trueheart, to see the case. He agreed with me in the diagnosis and recommended that an operation be done.

It being decided that an operation be done, I set the date as near the approaching menstrual period as I felt safe in doing, in order to build the patient up as much as possible, and prepare her for an operation.

As this was to be my first case of hysterectomy, when it came to the point of selection, I was undecided which one of the many methods to choose. I was afraid to make a pedicle and drop it back into the abdomen. To make a pedicle and fasten it in the abdominal wall, and allow it to slough off there, never has seemed to me to be ideal surgery, even if able men are having good results thereby.

I had read a description of the "Eastman Method." I was impressed at the time by this method, and it appeared to me to be the nearest an ideal method of any described in the books or journals.

I chose the "Eastman Method" and on the 13th of March, 1894, assisted by Drs. Trueheart and McLaughlin of Sterling, Smolt of Nickerson, Terry, Vermillion and Fisher of Lyons, and Dr. Ives, the patient's son-in-law, I operated in the following manner: The patient being anesthetized and placed on the table, the vagina was again thoroughly washed and the cervical canal packed with iodoform gauze. The abdomen being prepared, the patient was placed in the position of Trendelenburg. I now made an incision from a little above the pubes to within an inch of the umbilicus into the abdomen. There were no adhesions, but it was with some difficulty the tumor was turned out from its bed. I now placed a large clamp on the broad ligament close up to the uterus, on one side, placed and tied two strong, silk ligatures far enough from the clamp to leave good stumps, and with scissors cut that ligament between clamp and ligatures. I did the same on the opposite side. I could now bring the tumor up out of its place much farther and thus have more room to place the third and last ligature to the broad ligament on each side and include the uterine arteries.

I now made an incision through the peritoneum one and one-half inches above the bladder, and at a corresponding height on the back of the uterus, and peeled it

down to the utero-vaginal junction. An assistant now inserted an Eastman staff into the vagina up behind the cervix, and by throwing the tumor forward, I was able to cut down on it, thus making an opening into the vagina, through which I inserted two fingers forward and up over the cervix, and with curved scissors cut down on them through the attachment in front. The remaining portions of the broad ligaments, which included the uterine arteries, were now cut close up to the uterus, and the tumor delivered entire. I now picked up the uterine arteries and separating them from the surrounding tissue, secured them with silk and then removed the ligatures which enclosed them in the lower part of the broad ligaments. Thus I had left two ligatures on either broad ligament, which were left about eight inches long, and by making downward traction on them the stumps were brought down to the top of the vagina. Then I placed an iodoform gauze drain from above down into the vagina, and next brought the peritoneal flaps into position; and with a continuous Lembert silk suture neatly coapted their serous surfaces, thus completely shutting off the abdominal cavity from the wound and vagina.

After carefully cleaning out the peritoneal cavity with gauze sponges, fourteen silk worm gut sutures were used in closing the abdominal wound, and a continuous catgut suture more neatly coapted the integument. The ordinary dressings were applied and the patient placed in bed with hot bottles, etc. She rallied promptly from the shock. Vomiting was severe for eighteen hours; after that no trouble.

The gauze and ligatures in vagina made a perfect drain. The gauze was removed at the end of forty-eight hours and replaced with fresh gauze, and each forty-eight hours thereafter for some time the gauze was changed and the vagina douched with hot bichloride solution. There was never a drop of pus in the vagina nor any odor.

On the tenth day removed one-half of the abdominal sutures, and discovered a stitch-hole abscess, caused by catgut used in closing integument being septic. This healed promptly after two or three antiseptic dressings. On the thirteenth day removed balance of abdominal sutures.

The patient made an easy recovery and is enjoying good health today.

On examination of the tumor at my office, I did not find the gauze that I had placed in the cervical canal before the operation. On inquiry none of the assistants knew anything of it, or had noticed it after it was placed in the cervix. We all feel sure, however, that it was not in the abdomen.

After this experience, I should certainly advise that one or two stitches be placed in the cervix, as Eastman recommends, to secure the safety of this gauze, and thus prevent any anxiety, such as I endured.

I expected the ligatures on the broad ligaments would come away in ten to fifteen days. On the twenty-eighth day one came away, the others not till after forty-two days. This delay can be remedied by cutting the ligatures that secure the broad ligaments short, and then introducing through the stumps heavy traction ligatures and tying in a long loop. After a week or ten days they can be cut and then pulled away. Something of the kind is desirable to draw away the stumps into or toward the vagina, to bring the raw edges of the stumps in a position, or in connection with the raw surface at the top of the vagina, where they may become attached, and thus hold up and prevent prolapse of the vagina. I believe in this way they form something like a suspension tress to hold up the vagina, and support the lower abdominal wall.

In the *North American Practitioner* for September, 1893, page 396, Eastman reports sixty-seven cases by this

method, and that by this method he has obtained the best results.

I am pleased with the Eastman method, and have neither seen nor read of a method more nearly ideal in suitable cases.

#### DISCUSSION.

Dr. WARD: The doctor's one case was successful and I congratulate him on his results. It is true that in some cases the complete enucleation is the preferable operation, but in cases where women have born children, with a patulous vagina the objection to the operation is the necessary prolapsus of the vaginal vault. In a recent conversation with Dr. Eastman of Indianapolis, he informed me that, in his opinion, the time was not far distant when the old-fashioned serre-nœud operation would be found preferable in this class of cases, because it does fix the vaginal vault, and there is no future trouble. In some cases I have found it impossible to do the serre-nœud or extra-peritoneal operation, because it was impossible to make a pedicle sufficiently long to avoid strangulation. Dr. Joseph Price is able to do this operation in all cases, but we are not all Joseph Prices.

Dr. CORDIER: I certainly congratulate the doctor on the results in his case. Very many of the cases operated upon by the method which he describes are successful, but the successes have not been as large as by the serre-nœud method. The latter certainly has many advantages, and instead of being a non-surgical procedure, as has been claimed by advocates of the total extirpation method, it is extremely surgical, because any procedure which has the lowest mortality and the greatest number of recoveries must, of necessity, be the most surgical procedure. By the serre-nœud method, we have absolute control of the hemorrhage, a great thing in these cases; you also have control to a great extent, of the sepsis, another great thing. You also minimize the time in doing

the operation, a third great advantage. It is always the method of my choice, and I have had 100 per cent. of recoveries in my cases. There is one thing that is lost sight of in these methods, and that is by the total extirpation method you have two wounds, whereas by the *serre-nœud* you have but one. That is quite a feature; the additional wound opens up the entrance to septic material. I now have a patient in bed upon whom I operated by the total extirpation method. I wanted to get away to attend the American Medical Association and wanted a quick recovery, and as these people have talked so much about the total extirpation method, I chose that. The result was that complications sprang up that prevented me from attending the American Medical Association. If I had stuck to the other method, I should have gotten away because the patient would have been doing nicely. It has been four weeks since the operation; the patient is getting well, of course, but she still has a little discharge from the vaginal vault. Some one may say that it is my fault, it may be my fault, but I try to be very clean in all my work, but it is very difficult to get the vagina absolutely aseptic in these cases where you are operating in the peritoneum. I am thoroughly satisfied with the *serre-nœud* method, and when practiced by skilled operators, the mortality should not exceed three or four per cent.

Dr. WELSH closed the discussion: I am not very much of an extemporaneous speaker and don't know how well I shall do. Dr. Ward thinks that a pedicle placed in the abdomen is the ideal method, and Dr. Cordier agrees with him. We generally believe that the method we have found most successful is the ideal method. That is the way I think about the method which I used. Dr. Cordier says there is danger of hemorrhage, of which, by his method, they have complete control. I think when the uterine arteries are ligated, as I did in this case, there is absolutely no danger of hemorrhage, because I ligated

them separately, separating the tissues from the uterine arteries and ligating them with silk. The time required is perhaps a little longer than with the serre-noeud, and perhaps there is more danger of sepsis. I don't know from my own experience how that is. Dr. Cordier claims that the percentage of cures is higher by the serre-noeud, and claims 100 per cent. of recoveries in his cases; I claim the same in mine by the Eastman method. Why, it is the prettiest method you ever saw, and cannot help but have as high a percentage of recoveries as any other method if properly executed. The abdomen is free from the whole tissue; there is nothing foreign left in the peritoneal cavity, simply a smooth serous surface for the intestines to glide over, and no pedicle in the abdominal wound, or anywhere else to slough off. I had a letter from Dr. Eastman in February last. From the tone of that letter you would not think for a moment that he was going back to the serre-noeud, and abdominal fixation of the pedicle, as I would take it from the conversation that Dr. Ward reports as having had with him at Baltimore a short time ago, in which Eastman said, "we will all finally come to the method of serre-noeud and abdominal fixation of the pedicle." I have just spent three weeks in the hospitals in Chicago. I did not see the serre-noeud used while there, nor a pedicle placed in the abdominal wall. I talked with several prominent surgeons there on the subject, and all of them except Senn, who has a cuff method of his own, do some form of total extirpation in removing fibroid uteri.

Dr. A. H. CORDIER, M.D., Kansas City, delivered the following paper on

#### DIAGNOSIS OF INTRA-ABDOMINAL TUMORS.

I fully appreciate the vastness of the subject I am to read about today, and I am aware how much must remain unsaid in a short paper. I realize that there is nothing of



more import to the reputation of the surgeon, the good name of the family attendant, and last, but not least, the welfare of the patient than a correct diagnosis. This is especially desirable in abdominal surgery, for it is here that an error in an opinion bearing on the diagnosis, and bad judgment in resorting to surgical methods are expensive to human life. While I do not claim that a positive diagnosis is possible in every case, I do believe that, with a few exceptions, an absolute and correct opinion can be arrived at in most cases. A tyro can say that this case or that has a tumor in the abdomen, and that, too, with his imperfect methods of investigation, but he could not, without accidentally guessing it, give an opinion deserving of much credence. I would not have you believe for an instant that I think the diagnosis of intra-abdominal neoplasms an easy undertaking. Far from it. I consider it extremely difficult unless the recognized methods of investigating these cases are carried out in their fullest details. This is what makes it difficult. When we fail to make a positive diagnosis, let us look back over our methods closely, and see if some of the details have not been either neglected or ignored entirely.

Lives have been lost as the result of an exploratory incision, the necessity of which might well have been avoided by a careful examination, and a well gotten history. An exploratory incision should not kill, but it has, in the practice of the most skilled and experienced surgeons.

In examining a patient, the following methods and procedures should be followed:

Inspection.

Palpation.

Percussion.

Auscultation.

Exploratory puncture (dangerous).

To which we may, in addition, call to our aid:

1. Microscope.

2. Chemical reagents.
3. Anæsthetics.
4. Photography.
5. Illumination.
6. Distension with gas or liquids.

The surgeon should early learn to observe what he sees. With this faculty uncultivated, his deductions must be faulty. By inspection we detect the surface landmarks—the skin discoloration, and markings of any cachexia the patient may be suffering from, as manifested on the surface. The movements of the intestines, or other movements from within are often discernible. Any irregularities of the surface or bodily symmetry are quickly recognized by the trained eye. It is necessary to recall these various methods as aids to diagnosis only: to suggest their application, but it is here we are too often faulty in the carrying out of the details and incorrectly interpreting their significance. The natural topography of any region under investigation should be familiar, and the infrequent physiological deviations these localities present should be taken into consideration in making a deduction as to the character of the pathology. Some growths appear in certain organs with a frequency suggestive of an inherent tendency or affinity for that organ, while another form of growth uses the age period as its elective time of development, with or without a special disposition to affect any given part. All these traits of the suspected neoplasms must be duly weighed. Of much import is the clinical history, without which a positive diagnosis is only problematical. Endeavor to determine if the growth is of a fluid or solid character. Having satisfied the mind on that point, try to determine whether you have to deal with a malignant or benign growth. Here, the duration of the presence of the growth, the effect on the constitution, the injury to the surrounding organs, and the organ supposed to be affected, will bring you nearer to an under-

standing of what you have to deal with. The examination of the various discharges, both natural and fistulous, often reveals truth invaluable as aids to a positive diagnosis.

In the elimination of the various supposed abnormal conditions, credence must be given to the peculiar, though not rare, trait some organs have of leaving their natural habitat, or to others that have been anchored by one of nature's faults during the intra-uterine life of the individual. Even the rare occurrence of transposed viscera must not be lost sight of.

Tumors through which gases are detected by the gurgling indicate either an involvement of the bowel in the tumor, or pressure of the growth on the bowel, with adhesions to the same. Now, if this symptom be coupled to a history of pyloric cancer, or a cæcal growth, it is confirmatory in its indications. Some growths have a disposition to change positions, but all growths have one or more attachments, and it is safe to infer that this attachment is to the site at which the neoplasm had its beginning, and its movements will be only around an arc of a circle with the pedicle attachment to the diagnostic point.

Adhesion may prevent a growth from moving, or may anchor a growth in a locality from its original point of starting. The history of inflammatory attacks and the pain will come to your rescue here. The character of the pain and the amount and area of tenderness are invaluable aids. The withdrawal of free fluid from the peritoneum will often show the presence of a tumor before undetected. I know of no condition requiring a more careful examination in order to decide as to whether all or part only of a fluid in the abdomen is free or enclosed in a sac.

Tumors of the stomach as a rule develop in localities most accessible to the examiner; that is, in the anterior wall and movable extremity of the organ. Gaseous dis-

tension of the organ often determines the existence or absence of a growth in this viscus, and at the same time leads one step closer to a diagnosis by eliminating or confirming the stomach as a suspect.

Discharges from natural outlets or fistulous openings should be examined most carefully, macroscopically and microscopally. The use of chemical reagents should also be resorted to in most instances where a doubt exists as to the exact character or source of the material being examined. By this precaution, bile, urine, pancreatic, gastric juices, feces, etc., etc., may be detected in fluids escaping from unnatural openings the character of which could not otherwise be determined. Tumors of displaced ectopic viscera require careful scrutinizing to avoid mistakes, but usually can be detected by recalling the natural site of that viscera and detecting its absence from its natural locality. Vascular tumors, aneurisms, and angiomas have characters peculiar to themselves, the pulsation being quicker, and are of a somewhat different character, but should be thought of in examining a growth in the lower abdomen of a female patient.

An enlargement of an organ, due to an obstruction of its venous system, may simulate a neoplasm, and this mislead the surgeon, such being the case in splenic enlargements accompanying cirrhosis of the liver. Here a close inquiry as to the habits, and presence of ascites, and often hemorrhages from the stomach are diagnostic. A thorough knowledge of the anatomy and physiology of the nerve supply of a given locality is essential in correctly interpreting the significance of localized and referred pains. Localized tumors due to a dyscrasia, as syphilitic nodules of the liver, may be diagnosed both by the history and evidences of the constitutional disease in other parts of the body. It is often difficult to obtain a correct clinical history from the patient, but a close inquiry from the physician will usually elicit quite an exact history. The physician should never make his questions

in a leading manner. As a rule, early growths are diagnosed much more easily than if they are seen late, when many complications, due to involvement of distant or surrounding structures are present, and all normal landmarks are destroyed, and the original pathology is found blended with that of a later period.

I am cognizant of the statements made by some of our best operators that it is impossible to make a diagnosis prior to an exploratory incision, yet I do not agree with them. They are great men as operators, but when it comes to sitting down deliberately to get a correct history, and to resorting to all the diagnostic methods applicable, they are sadly wanting in patience, time and disposition to go at it thus systematically. They simply say, "We have something here to be removed," and cut down on it, and either complete the work or close up.

The retention of sufficient physiological material or fluids to cause a perceptible tumor will produce, as a rule, evidence of a partial or complete suspension of the physiological action of these fluids, or the indications of a diminished or changed character of that escaping from the body. The tumors of the gall bladder, and hydro-nephrosis may be cited as illustrative of each of these conditions. These growths, (cysts) may, and often do, disappear, and their temporarily suspended function is resumed. A tumor, fluid in character on either side, that from time to time disappears, to reappear again, is always a hydro or pyonephrosis.

Photography, with its wide application, has been used by myself and others as a diagnostic helper. It has served me well in demonstrating to a hysterical patient how fruitless were her attempts to deceive me in her endeavors to palm off the spurious for a genuine article. A photograph of her protuberant abdomen while awake, and another while under an anesthetic, soon convinced me that her tumor was a brain tumor in the abdomen—a phantom.

Size perception is best understood and recorded by the aid of the camera. A comparative record of growth is thus accurately recorded. Rapid growths simulating pregnancy may be thus recorded from time to time.

The camera has invaluable uses in recording cases. Landmarks may be made by the surgeon with pen and ink on the abdomen and their relationship to rapidly growing neoplasms faithfully recorded for comparisons at some future time.

Transient physiological enlargement of an ectopic organ is noticed only in two organs, the spleen, and the kidney, the former during digestion, or soon after a meal, or during acts of physical exertion and the latter during the menstrual period. Enlargements that are sudden, or that develop within the space of a few minutes (?) or hours, are always due to either hemorrhagic infiltrations, the presence of retained or extravasated air or gas, or to the rapid accumulation of retained physiological products. The mere mention of these occurrences is all-sufficient to recall the diagnostic methods necessary to make a correct deduction in the majority of instances. If every physician would familiarize himself with the clinical history of the presence of pus or other septic material, there would be fewer cases of malaria, grip, typhoid fever and neurasthenia.

To make a diagnosis in a consultation is often very hard, for it is here that one usually has the opinion of one or more practitioners as to the condition, they having examined the case before you are called. It is a good and proper practice for you to take the case for examination, as though you had had no opinion expressed to you by any one. You thus go into the case, not with the conviction that you have this or that preconceived condition, but with the knowledge that something is wrong, and the belief that you can find out for yourself what it is by a thorough and systematic examination, such as I am advocating in this paper.

Pus in the pelvis is, to me, one of the easiest conditions diagnosed. A few years ago, the negro race was considered especially liable to the development of uterine fibroids; so much so that some older authors estimated that from 40 per cent. to 60 per cent had, at some period of their existence, these neoplasms. But with the advance in knowledge during the last decade in pelvic pathology, it is learned that these growths are not found with greater frequency in the colored race than in the white race. On the other hand, they are very frequently afflicted with ovarian abscesses and pyosalpinx, conditions the sequelæ of gonorrhœa abortions and tuberculosis.

The oculists have developed the science of diagnosis to such an extent that it is almost exact. Why should we not be able to do likewise in abdominal diagnoses, where our lesions are larger and more easily defined? The oculist today can make diagnoses, which, had he only claimed the ability to make a few years ago, would have caused only words of ridicule and disbelief. The eye conditions in locomotor ataxia, and retinitis albuminurica are discernible long before the general manifestations can be discerned.

Ladies and gentlemen, as you see, I have not taken up individual neoplasms, but have generalized by touching principally upon the salient diagnostic points that enable one to eliminate or to arrive at his diagnosis by exclusion. I trust that you will make up in the discussion for the shortcomings in my article.

#### DISCUSSION.

Dr. SHELDON said: I hardly feel competent to open the discussion; but I may make one suggestion, and that is in regard to percussion, we may be sometimes deceived by adhesions. When we have extensive adhesions upon one side, adhesions of the omentum to the peritoneum, of the

omentum to the intestines or of the intestines to themselves or to the surrounding peritoneal tissue, it may appear to us, it may give us the idea that we have a growth, a neoplasm, or perhaps that we have a cystic tumor. You may find a patient of this character, with extensive adhesions on one side, and less extensive on the other; you may get normal resonance on the side that is not affected, while upon the other, you get dullness upon percussion that would indicate a neoplasm or some other form of growth. Now, let us turn our patient upon the other side, upon the opposite side from which this growth comes, and see if it will follow our patient in that position; it will not do it. I have in mind now a case in which I made a mistake myself. I thought I had an encysted right ovarian tumor; I thought I had a cyst; I thought so because I had fullness on the right side of the uterus, and the other conditions were present; but an operation showed me that I simply had adhesions, the most extensive adhesions of the peritoneum to the omentum, of the omentum to the intestines and of the intestines to themselves, clear down in the pelvic cavity, and when I got down as far as the ovaries and tubes, I found extensive adhesions there, with diseased conditions. The only point I wish to make is this: that we should be very careful in making our diagnosis in these cases, for we are liable to be deceived in this particular. The rest of the paper pleased me greatly. It marks out the necessity of care in making your diagnosis in intra-abdominal tumors.

Dr. HALLEY: I think the paper a very excellent one, and one that calls the attention of the profession to a field that is deserving of the most careful study and cultivation of the senses along this line. The test of the surgeon's ability, is his ability to make correct diagnoses. Anybody can operate if you tell him what to do and how to do it; the chief question that arises, and the hardest one to answer is, when the opera-



tion should be done. This necessitates, then, the most careful study of the relation of parts in the abdominal cavity, and the basis of all this knowledge is very accurate knowledge of the topographical anatomy. The surgeon will rarely go astray; he cannot always know exactly, but he will very rarely go astray when he is a master of the topographical anatomy of the abdominal viscera. It is true you do find organs entirely out of their places. I have been picked up in this way in a great many cases, though I have prided myself on having a pretty good knowledge of the topographical anatomy of the abdominal cavity. Some years ago a man came to me with what I diagnosed as carcinoma of the transverse colon. I thought possibly I could make an anastomosis, or make excision of a segment of the colon and prolong his life if I didn't find the mesentery too much involved. The tumor mass was quite below the umbilicus, lay to the right side and below the umbilicus entirely, no part of it being above that. I thought I was stretching things when I told him it was the transverse colon; I wasn't sure it was not the sigmoid flexure. Imagine my surprise when I opened the abdomen to find that it was the pyloric orifice, the entire stomach being enormously distended, and down on the pelvis, filling it entirely. This is a displacement that does not often occur. Of course, the operation was a failure. Then, again, it is a difficult matter sometimes to differentiate lesions that are the result of tubercular infiltration of the omentum, from fibrocystic or cystic tumors of a solid nature, involving possibly the broad ligaments, more often, however, the ovaries. This has occurred again and again. Once I operated, and found to my perfect astonishment that I had an enormously infiltrated omentum in place of an ovarian tumor. The location of organs should be exceedingly accurate in the mind of every man who pretends to surgery, and the mistakes that he will make will be very much fewer than they will if he makes hap-hazard, hop, skip and

jump diagnoses. The experience that he gains by again and again examining these cases will, of course, help considerably, but there is nothing that will take the place of accurate knowledge of the anatomy.

Dr. J. P. LEWIS, of Topeka: The paper that was read is certainly commendable in the line of perfection. It is desirable that we should be as perfect as the author of the paper tries to make us, but unfortunately, through life, in the practice of medicine for many years, we find it is not the fact; we find that we do not all make perfect diagnoses; neither do what you call the great surgeons make perfect diagnoses. I have in my mind now one of the greatest surgeons of this country, Dr. Thomas of New York; he diagnosed a tumor, went into the abdomen and found he had a foetus. Dr. Thomas has been recognized for many years as a great diagnostician and surgeon and yet he made a mistake. I have seen good men diagnose obstruction of the bowel and find strangulated hernia. You cannot always be perfect; I believe in perfection, I believe in making perfect diagnoses, when possible; but I do not believe it to be always possible, nor do I think the author will hardly be able to make us believe that we are perfect.

Dr. CORDIER closed the discussion: Just a word to set myself right before the Society. I do not believe or claim that a positive diagnosis is possible in every case, as Dr. Lewis implied by his remarks; but I say that in the great majority of instances it is, and it should be our endeavor in every case to make a positive diagnosis. The doctor in New York referred to is one of the practitioners I referred to in the paper; they are recognized and known as great surgeons, but they take too much for granted. When you are making a diagnosis of intra-abdominal tumor, you have got to sit down, take your time and do it systematically; you cannot go at it in a hap-hazard manner to make a diagnosis of intra-abdominal tumor, but you can do it successfully in the great majority of instances if the

proper methods are carried out in their fullest details. I wish to again refer to photography as an aid in these cases, where the question comes up as to whether a tumor in the center of the abdomen is a pregnant uterus or some other kind of a tumor. If you are not satisfied, if there is a doubt as to whether it is pregnancy or not, you will have to wait awhile; make your landmarks on the abdomen with pen and ink; photograph your subject and put the photographs away and keep them for two or three months; have your patient return and then compare the abdomen with the perfectly recorded picture that the camera has made for you; compare the size with the size of the patient, and see if you can find what you would expect it to be if it is a pregnant uterus. These comparisons will be of invaluable assistance in developing your cases. If surgeons will use photography more in these cases, I am satisfied they will find it of very great benefit to them in their work.

Dr. D. K. LONGSHORE delivered the following paper on

TWO OPERATIONS THAT MADE PREGNANCY  
POSSIBLE.

The heart of the doctor is gladdened some times by the announcement by a lady that pregnancy is not possible with her, and that she would like it made so by medical or surgical skill. We immediately proceed to discover the mechanical obstructions and any other hindrance if possible. Three or four years ago a lady came to me with a profuse leucorrhoea and erosion of the os over an extensive surface. I made local applications of iodine, etc. She used hot water douches for a few weeks, during which time the cystic degeneration of the cervix became more manifest. I proposed curetting the cervix and deep incisions of the tissues that would lay open the parts and allow the cysts to be emptied or destroyed. Hot irrigation and the corrosive tablets were used all

the time. The patient suggested that if I gave chloroform I should call in a certain good doctor of mutual acquaintance. We did so, and he suggested removing a solid piece from the anterior lip. We each did according to our own light and the result is that the cervix was so well drained that it assumed a normal size—having been as large as the body of the uterus itself. The leucorrhea ceased, the erosion healed and in a year pregnancy took place, the lady having been married eight years.

In case second the vagina was no larger than a straw, just room enough for the menstrual fluid to pass. Anesthesia was necessary for the introduction of the index finger or speculum. A band crossed the posterior wall of the vagina. Dilatation of two inches was accomplished the first day. Irrigation was kept up five days and dilatation every day for two weeks. She yielded to chloroform slowly. When lying at rest she seemed completely under its influence, but a turn of the dilator screw would excite a contraction in almost every muscle in her body. At the third dilatation the tissues parted on each side of the vagina, but the posterior band did not yield until I placed the bivalve speculum in the lateral position and incised the posterior wall in two places for two inches from above downwards, about as deep as to not cut the rectal mucous membrane. This ended our acquaintance. She proceeded with listerine and douching and a dilator that she could use herself. The last heard from her was several months pregnancy. She is anxious for the outcome of labor. The *New York Medical Record* of Nov. 17, 1894, gives a cut of two cases. One with one posterior band, and one with two bands. Dr. H. N. Vineberg, New York Post Graduate School, is the author of the article. He calls them rings. They are pictured as rings, and he dissected them out and brought the upper and lower edges together with several stitches and obtained a good result. He of course thought his method

better than forced dilatation. Nothing succeeds like success, and I am apt to think I am right when I succeed. I have never met with an imperforate hymen. Once with the occlusion of the internal os that I reported in this Society some years ago.

#### DISCUSSION.

Dr. WARD, being called upon to open the discussion, said: I do not care to discuss this paper at any length; the lessons were interesting and the results perfect. I was in hopes from the title of the paper that we should hear something about operations on the fallopian tubes in diseased conditions, with pregnancy following; however, the paper is valuable. I have had two similar cases myself within the last year; the results were perfect and the ladies are now happy in pregnancy.

Dr. S. E. SHELDON read the following paper on

#### ECTOPIC PREGNANCY.

The subject of ectopic pregnancy is one of deep interest not only to the specialist, but more particularly to the general practitioner, because in a great majority of cases he is the one who does or should first discover the displaced or abnormally located pregnancy. I use the term "ectopic" instead of "extra-uterine" because it is a broader and more comprehensive term, including as it does not only all extra-uterine pregnancies, but also that form of pregnancy which occasionally takes place in the walls of the uterus, in the ostium internum of the fallopian tube, or in that portion of the fallopian tube where it passes through the uterine walls.

There are five forms of ectopic pregnancies that we will study:

1. The interstitial, or those that take place in the ostium internum.

2. The abdominal, those that take place or are found in the abdomen.

3. The ovarian, or those that take place on the surface of the ovary.

4. The intra-ligamentous, those that are first discovered within the folds of the broad ligament.

5. The tubal pregnancies, or those that take place within the fallopian tube.

And I am strongly of the opinion that each one of the first four forms of pregnancy in a great majority of cases, if not all of them, belong originally to the fifth class or that of tubal pregnancy, and becomes one of the other forms at a subsequent date from rupture of the tube or from its escape from the fimbriated extremity of the fallopian tube.

The etiology of ectopic pregnancy is still shrouded in doubt, but after examining a large number of cases and the prior history of these patients, I am led to the opinion that the true cause is a former salpingitis, which has either destroyed or impaired the integrity of the ciliated epithelium of the fallopian tube to that extent that the ovum is impeded in its passage through the tube, together with the impairment of the peristaltic action of the tube through the same inflammatory process; each of which is believed to aid in the transmission of the ovum from the ovary to the uterus; while upon the other hand there is no impediment to the entrance of the spermatozoa into or its passage through the fallopian tube, as it possesses an independent movement and power of locomotion of its own, as is well known.

At some point in the lumen of the fallopian tube these two germs coming in contact fecundation takes place, finding a suitable lodgment in the deeper or columnar epithelium, which is only a continuation from the mucous membrane of the uterine cavity, which is its normal habitat. In every case that I have seen, and in every one in which I have been able to obtain an intelligent history,

there has invariably been a history of a former salpingitis of more or less severity; and this I believe accounts for the more frequent occurrence of ectopic gestation, viz.: the more frequent occurrence of salpingitis.

The early symptoms of ectopic gestation are even more varied and uncertain than those of normal pregnancy, and every one of you know of the chagrin and disappointment that you have been obliged to contend with because of your inability to diagnose positively the existence or non-existence of a normal pregnancy. In ectopic pregnancy you have many if not all of the symptoms of normal pregnancy and about as uniform and constant in the one as in the other. The morning sickness, the cessation of menstruation, the changes in the breast and areola, the form of the nipple, the changes in the genitalia and other well-known signs of normal pregnancy. But there are other signs upon which we must depend to complete or confirm our diagnosis of ectopic pregnancy and they are mostly objective. But first get a history of the case, especially as to former salpingitis, or of some pelvic or peritoneal trouble. Your patient will at an early period of her abnormal pregnancy complain of frequent, sharp, lancinating pains in the region of the new formation. These will vary greatly in character, severity and duration. There is apt to be marked tenderness over this region, and later on a fullness of that side. A digital examination will demonstrate a slightly enlarged uterus but not to be compared with one undergoing normal gestation at that period. Upon the affected side will be fullness in the tubal and ovarian region commensurate with the duration of the pregnancy. If it is in the upper part of the tube, or if it has escaped into the peritoneal cavity, it will be much less distinctly felt and recognized than if it has escaped downward into the broad ligament, when they can be early recognized and determined. A peculiarity of ectopic gestation is this: that while it is in progress outside of the uterine cavity a condition is

taking place within the uterine cavity very similar to what takes place in normal pregnancy, viz.: the uterus enlarges and the membranes of conception form, though perhaps imperfectly; and are usually thrown off before or about the third month, often with severe and continuous hemorrhage, and this condition is often mistaken for an early abortion both by the patient and the physician, the true condition not being recognized. If at about the beginning of the third month (which is the most usual time), or at any prior or subsequent period the tube bursts or the foetal sac is ruptured into the peritoneal cavity, you will have another class of symptoms that will come on suddenly and be severe, and they will consist of a sharp pain and a more or less severe shock or collapse and the symptoms of internal hemorrhage. This latter class of cases demands prompt surgical interference, both to arrest the hemorrhage and to relieve the peritoneal cavity of its foreign contents, and should be conducted like other laparotomies and under strictly aseptic precaution.

When an ectopic pregnancy has been diagnosed prior to its rupture, I believe that an early operation is the safest procedure. The destruction of the foetus either by electricity or by the injection of morphia or chloroform or any other foreign body should not be recommended, as the operation is dangerous in itself and if successful in destroying the foetus it leaves within the pelvic or peritoneal cavity a foreign body that may afterward give trouble and necessitate a subsequent operation. When the tube has ruptured through its lower border and the foetus has escaped into or between the folds of the broad ligament the shock is less severe and the danger of hemorrhage is much less on account of the firm walls that produce sufficient pressure to prevent extensive and fatal hemorrhage, and it is this latter class of cases that may and often do go on to full term when they may be delivered by laparotomy successfully to mother or child,



and sometimes to both, but if not delivered the foetus dies and gradually atrophies; but the vital powers are not sufficient to remove it entirely and consequently a foreign body is left within the pelvic cavity, a constant menace to life and health.

When we consider the constant danger to which our patient is exposed, no matter what may be the form or duration of the abnormal pregnancy I believe it to be our duty to recommend an early operation, as soon as the diagnosis has been made, as the safest and surest means of immediate and permanent relief.

#### DISCUSSION.

Dr. FELTY: I have nothing to say in the discussion of this paper more than to emphasize one point: I think the man who uses electricity in this day of advanced surgery is culpable, and does his patient very much more harm than good. As the doctor has said, electricity destroys the life, the vitality, so to speak, but does not get rid of the embryo, the foetus. Another point which I desire to emphasize is this: As soon as your diagnosis of extra-uterine pregnancy has been made, and perhaps verified by two or three brother practitioners in counsel, in whom you have confidence, I think the sooner you operate the better for the patient, and the greater the probabilities of success. Not very long ago I saw a case in counsel, in which a general practitioner told me that he had diagnosed abdominal pregnancy, but was afraid to operate; he had heard of such uniformly and successful results that he was afraid to tackle the operation; when I saw the patient she was moribund. I hold this view: That the surgeon who is capable of correctly diagnosing his case is also capable of performing the operation successfully, and I again repeat that the sooner you operate for extra-uterine pregnancy the better for all concerned.

Dr. CORDIER: I have been on my feet so much today that I am almost ashamed to be heard again, but this

subject is of so much importance that I think it should be discussed in every medical society in the country. It is old, and yet it is comparatively new to most of us. The whole thing resolves itself, as in nearly all other abdominal work, into the question of early operation. It must be recognized early and operated early; you can operate on these cases in the most unpromising condition, and in the great majority of instances they will recover; you will find these cases where an acute rupture has taken place and the patient is full of blood and the abdomen is greatly distended; if you will operate quickly with irrigation and drainage the greater per cent. of them will recover. It is remarkable how many of these cases are coming under the notice of the operator nowadays. I had one case brought to me by a doctor 500 miles on the train; he was at first incredulous, but I finally convinced him that it was a case of extra-uterine pregnancy. I cut into the peritoneum and found a whole wash bowl full of blood with a little foetus. As I have said, very many of the cases can be cured and lives saved. They should be invariably irrigated and drained; there should be no exception to that rule in extra-uterine pregnancy; a drainage tube should be put in and the peritoneum kept dry.

I want to suggest a distinction between the man who makes a diagnosis and the man who operates; I do not believe that everybody can operate. I know of men who have never seen an operation performed, and for such men to go into the abdomen and operate for extra-uterine pregnancy would be, in my judgment, a great mistake. I believe the work of operation should be left to experienced operators, unless it be a case which demands immediate interference, and then you should operate if you have nothing but a jackknife. If you have not operated yourself, I should advise you by all means to see the operation performed several times; it casts no reflection upon any surgeon to be diffident about operating in the abdomen until he has seen similar operations per-

formed. We should look to our patients' interests and not to our own pride.

Dr. WARD: In regard to the physiology of extra-uterine pregnancy it is, as one of the doctors who sat next to me said, because the spermatozoa gets the start of the ovum and beats it in the race; that is about all we know of it. Now, in regard to the operation, I believe that the operation for extra-uterine pregnancy is the simplest operation that we can perform in the abdomen. I think that every surgeon should do it, and can, if he will; you can perform the operation and get back home in fifteen minutes, and your patient will get well with the abdomen full of blood. It is all right to irrigate and drain; it is all nice enough, but very many times you kill off your patient.

Dr. CORDIER: You don't do it right.

Dr. WARD: I haven't had as much practice in these cases as the doctor, but the less you do in these cases where there is a shock due to a large amount of blood the better off we are; if the patient can stand it, by all means use drainage. I believe we are all too much afraid. I want to encourage the doctors to do this operation. I do not like to say this because I make my bread and butter from these cases which the country physicians send to me, but I believe that when women are suffering from this cause, you should go into the abdomen, stop the blood, and, if you can, irrigate and drain, close the abdomen up, put your patient back to bed, put hot bottles to her feet, give her stimulants and she will recover.

Dr. SHELTON closed the discussion: I think Dr. Cordier misunderstood me. I said that the general practitioner is the one who should and does, as a rule, make the diagnosis; I did not say that he should operate.

Dr. CORDIER: I referred to the statement of Dr. Felty; still in an emergency, I think the general practitioner should operate.

Dr. SHELTON: Now, in regard to what Dr. Ward said:

If you do not lose too much time by irrigating the abdominal cavity, if there has not been too much peritonitis and if the absorbents are in reasonably normal condition, you will get good results by irrigation.

Dr. IDA C. BARNES, A.M., read the following paper on

#### ATRESIA OF THE CERVIX.

The topic as given is somewhat indefinite, and should be limited by the word uteri. Cervical atresia is the term applied to the occlusion of the cervical canal of the uterus and may be partial or complete, the latter occurring in most exceptional cases, usually a complication of vaginal atresia or some malformation of the organs of generation; while the former, according to reliable statistics is quite common after the menopause one authority stating that 20 per cent. of women after fifty years of age have atresia of the cervix.

Hence we must conclude that it does not always seriously interfere with the health of women, or more cases would find their way to the physician's office; and I am assured from experience and observation and a lack of literature upon the subject that recorded cases are comparatively rare.

These cases which occur earlier in life, during the period of the functional activity of the uterus, are fraught with dire consequences in the shape of hæmatometria and hæmato-salpinx, and should septic infection exist after the cessation of menstruation there may result pyometra or physometra.

The pathology of the majority of these cases consists of a more or less tense membrane extending across the external os uteri.

Congenital atresia very rare is due to defective development and accompanied by other pelvic anomalies.

The etiology of acquired atresia is due sometimes to careless repairs of the cervix in secondary operations in

which the mucous membrane of the canal is involved; also as a result of the sloughing after labor, excessive cauterization, amputation of the cervix and may follow the cicatrization of ulcers of the cervix coincident with senile atrophy and tumor in the cervix or lower part of the uterus.

Atresia may occur also in prolapsus from friction against the pessary or in complete prolapsus from rubbing on the thighs.

Atresia during pregnancy has also been reported but without good authority.

The treatment is the same in all cases, to relieve by puncture except in the congenital variety where failure of development of other organs does not demand it.

I offer the report of some cases which have come under my own observation.

Case No. 1. Mrs. R., aged 30, one child; was operated upon, 1890, in an Eastern city for relief of cervical and perineal lacerations which had existed since birth of child several years previous.

She made a good recovery, the perineal operation being very satisfactory.

Six months later it was discovered that menstruation had ceased and examination revealed the fact that the cervical canal was closed.

No grave symptoms required urgent interference and I lost sight of the patient, but presume that surgical relief must have been afforded later.

Case No. 2. November, 1890, Miss A., aged 17; a colored girl came for treatment of a menorrhoea.

The menstrual molimen had occurred at regular intervals for the last year, but there was no escape of the menstrual flux, and symptoms of suppression were very prominent.

She had previously been given various medicinal remedies in the hope that a stimulation of the nervous system

and development of the uterus and adnexa would relieve the conditions existing.

Examination per vaginam revealed a canal only one inch in length and ending in a blind pouch.

Surgical means for relief were attempted in the form of opening up the vaginal canal, it being ascertained by rectal examination that the uterus and ovaries were of normal size.

After working upward an inch and a half and finding only a membranous cord or ligament corresponding to the cervix uteri the design was abandoned and after recovery the ovaries were removed, that being the only means of relief remaining.

She made a good recovery from the latter operation while her former disabilities were entirely removed.

Case No. 3. March, 1894, Mrs. M. M., aged 58, widow; menopause occurred thirteen years ago.

Has never been very strong and was subject to attacks of pain in the pelvic region, which she described as a feeling of fullness and bearing down, lasting for days and months and finally relieved by a sudden gush of watery discharge from the vagina.

This has taken place at intervals of six months and a year during the last six years.

After several years of widowhood she remarried; three years before, when excessive dyspareunia rendered marital relations impossible and greatly aggravated the nervous complications accompanying the condition.

At the time I saw her she was a second time a widow, and suffering from extreme nervousness attendant upon the recent death of her husband.

She complained also of great tenderness and soreness in the ovaries and supra-pubic regions, and much back-ache, with loss of appetite and indigestion marked, and insomnia.

Pelvic examination per vaginam and rectum revealed a small uterus, some thickening of the posterior bladder

wall; extreme sensitiveness to manipulation of the whole pelvic area.

The speculum showed the tissues congested and the external os uteri entirely closed by a tense firm membrane.

Puncture quickly relieved the atresia. A few drops of muco-purulent fluid escaped immediately, and oozing continued for several days.

A tampon of absorbent cotton medicated with boro-glyceride was introduced into the vagina to relieve the congestion.

This was very comfortable for an hour and then severe pains in the bladder and urethra supervened.

The urethral pain had been a concomitant symptom of the atresia before spontaneous rupture on former occasions.

Two days later the patient reported that the sensation of fullness and bearing down had disappeared in some measure, but much sensitiveness still remained.

I passed the probe again further into the uterine canal, desiring to secure better drainage. This was done without any great pain and a cotton tampon of much smaller proportions was appropriately applied. The patient went to her home, some two miles across the city, without inconvenience, but two hours later the urethral pain appeared, accompanied by tenesmus and frequent desire to urinate. This lasted for several hours and then passed off.

Once more thinking that the journey home possibly had produced the ill results, I treated her at her home still more carefully, but with no better success.

In the meanwhile all the uterine symptoms became replaced by the urethral symptoms existing.

I then resorted to diuretics and later washing out of the bladder, with some mitigation of pain, which, however, was not completely relieved until the urethra was dilated.

In addition attention had been given to the proper ac-

tion of all the functions of the body with diet and tonics as needed.

During the last year the patient has been comparatively well.

Case No. 4. April, 1894, Mrs. G., forty-five years of age. Menopause had just begun.

To relieve an obstinate leucorrhœa she had, at the solicitation of friends, been using a vaginal medication in the form of a wash, I think sold by street vendors of such nostrums.

She was a well nourished woman, and her only symptoms were those of suppression of uterine discharges, accompanied by a mild degree of insomnia.

Vaginal examination showed a tense membrane extending across the external os uteri, also some tenderness of uterus and adnexa.

Puncture of this membrane and three treatments consisting of iodine applied to cervix and vault of vagina and pledget of absorbent cotton medicated with beryglyceride thoroughly relieved without further untoward symptoms.

Dr. F. F. GREENE read the following paper on

#### ABNORMAL GROWTHS IN THE FEMALE URETHRA.

A variety of abnormal growths occur in the female urethra; and more frequently than in the male, and until of a late date they have not been scientifically classified nor received that study and attention which their importance demands.

The most important variety, because the most frequent and distressing, and to which I invite your attention is the papillary polypoid angioma, more commonly known as urethral caruncle or irritable vascular tumor or enlargement of the urethra, etc., names which have been incorrectly used to cover a variety of growths in the female urethra.



Irritable urethral caruncle is very fully described in various works on diseases of women, and seems to be about the only neoplasm of the female urethra described by old authorities, probably for the reason that their attention was more frequently called to this affection, as it usually always causes extreme suffering, and its location being near to or at the meatus, where it could be quite readily discovered by inspection.

They vary in size from that of a mustard seed to that of a hickory nut; are of pale to a bright red color, and are usually single, but may be multiple, bleed easily on touch, and are composed of dilated capillaries and connective tissue covered by mucous membrane.

There appears to be no single exciting cause, as they have been found in the young and old, the married and single. Chronic congestive and inflammatory conditions of the urethra doubtless predispose to their formation.

Painful micturition is common, especially when the tumors are large, until which time the patient may for a long time experience nothing more than a slight irritable condition of the urethra.

If, however, we except fissure of the anus, there is no disease of so trifling a magnitude productive of such intense and intolerable suffering as the papillary polypoid angioma.

The pain is frequently not limited to the urethra, but radiates to the hips, sacrum, thighs and feet. It is present in some cases at all times, and is increased by standing, walking or sitting, by the slightest contact of clothing, and in fact every touch and movement causes intense pain, which becomes excruciating in the act of micturition.

Coition in some cases is impossible, which may account for its having been occasionally mistaken for vaginismus.

It may cause convulsions and serious disturbance of the general health and mental state, from pain and loss of

sleep, and the bladder and kidneys may suffer if there be retention of urine.

Thomas says there are but two conditions with which he has ever known the disease confounded. One is prolapsus urethra or eversion of the mucous membrane of the canal; the other syphilitic growths of a warty character; but in the light of our present knowledge there seems to be no doubt but that the irritable caruncle has been frequently confounded with hyperplasia of the tissues around the mouths of the urethral glands. Dr. Skein acknowledges that he has made that blunder himself, and says he cannot see how others could have made a differential diagnosis if guided by the current literature upon the subject, and that it is quite possible that a non-specific vaginitis such as we find accompanying ordinary uterine disease, or parturition, might induce a high grade of inflammation in these glands, with all the pathological changes resembling caruncles, but as yet he had not observed any evidence that such is the case, and is disposed to attribute all such cases to gonorrheal inflammation or tuberculosis.

I have met with one case which appears to have been occasioned by nonspecific inflammation of the urethral glands which, to illustrate, I will report:

The patient, a woman of middle age, mother of several children, with a history of fifteen years of suffering from painful micturition and other symptoms which she had been told were common to uterine disease and displacement, and that it would be necessary for her to wear a pessary and abstain from all work for a year. No evidence whatever of her having had any venereal disease. After listening to the recital of her symptoms and history of the case, I told her that my opinion was that the principal cause of her suffering was not due to uterine disease, but to some disease of the urinary outlet, the character of which could only be told by a visual examination, which disclosed as I apprehended a vascular bright

red growth, about the size and shape externally of the finger nail, which was attached to the floor of the urethra at the meatus urinarius and partially protruding from it and apparently blocking the passage, causing some dilatation of the lower half of the urethra.

Owing to the painful character of the case I refrained from exploring it very thoroughly and told her that the customary procedure was to remove the growth by an operation, and that it might return. She wished to know if it could not be cured without. I told her I would first try to do so.

At the second examination, having obtained local anesthesia of the parts, I was able to make a more thorough examination, when I discovered that there were two growths instead of one, both of which were attached to the floor of the urethra at meatus. I have previously had some discouraging experience with similar growths, and set about devising or discovering some more successful treatment of this distressing malady.

While exploring around the tumors with a small probe it entered the mouth of a small duct just posterior to the base of the growths, which caused intense pain. I soon discovered that the conditions were precisely the same in both, and that these ducts were in an inflamed, catarrhal condition. I was not aware of the importance of this discovery till later when I ascertained that the inflammation of these glands was the cause of the hypertrophied growths at the mouths of their ducts, which so much resembled papillary polypoid angioma.

After injecting these glands and making local applications to the growths ten times from October 7 to November 19, the growths had so surprisingly diminished that they were scarcely discernible, and the patient entirely relieved and much improved in her general health. After about three months the disease showed an inclination to return, when a few more applications completed the cure, which is evidently permanent, as it has now been

nearly five years since it showed any tendency to recur. Her gratitude was only exceeded, perhaps, by my own satisfaction in being able to permanently cure so distressing and long standing a malady without resorting to knife, ligature or caustic, which could have resulted in no permanent benefit and probably injury.

I do not wish to convey the impression that inflammation of these glands is easily cured, for it is not in all cases. The ducts are small, and it requires considerable dexterity and ingenuity to successfully medicate them, and sometimes they have to be laid open.

It seems surprising that the cause of this distressing malady should have been overlooked till of recent date. Surgeons of eminence, specialists in gynecology and their students, have up to a late date, and possibly some are still removing these hypertrophied growths with the knife, ligature or cautery only to see them return, and some with a stricture from these unnecessary operations, and the miserable victims told that "what cannot be cured must be endured."

The cause having been discovered the cure is a comparatively simple matter (provided it be of specific or non-specific origin).

Thanks to the conservative and inquiring mind of one not satisfied with his early education, who discovered the urethral glands, also called Skein's glands in memory of the eminent gynecologist who first described them and discovered their importance.

Dr. B. J. WETHERBY read the following paper on

#### ENDOMETRITIS.

The subject of this paper is, no doubt, familiar to you all. I am sorry I have nothing new to offer. I will only attempt to present a few thoughts gathered more from the late authorities than from my own personal experience, and at the same time outline a method, or

more properly the methods, of treatment that have given the best results in my own practice.

Endometritis, as its name indicates, is an inflammation of the mucous membrane forming the lining of the uterus. Perhaps with every case of endometritis there is also a certain amount of metritis. Such, I believe, is the case. If there is not an actual inflammation of the muscular tissue of the uterus, there is certainly a congestion or hyperæmia, as is manifested by the sub-involution, or hyperplasia, as Thomas used to call it, which is present in nearly every case, especially those of long standing.

All cases can be divided into two general classes, acute and chronic. Pozzi makes four classes: acute, chronic interstitial, chronic glandular and chronic polypoid. Montgomery says "for clinical purposes endometritis may be classed as acute inflammatory, hemorrhagic, catarrhal and chronic painful." Winkel recognizes two forms, the hypersecretory and the hæmorrhagic. It may be limited to the fundus alone, to the cervix alone, or may involve the entire endometrium. I believe I have had more cases of cervical endometritis than of corporeal or of both the fundus and cervix together. I have seen very few cases in which the corporeal endometrium was involved while the cervical remained healthy. The reason for this is obvious.

The most common cause is undoubtedly some form of sepsis. Personally I believe sepsis to be about the only cause. Among the septic causes, gonorrhœa stands at the head of the list. When a lady previously healthy, marries, and in a few months develops an endometritis with its attendant train of symptoms, I always suspect an old gonorrhœa on the part of the husband, perhaps one which he has considered cured for a number of years, and I generally find my suspicions correct on privately questioning him. Right here I want to say that I believe gonorrhœa is seldom entirely cured, but may remain latent for a number of years and then cause a true

gonorrhœa in the wife, with endometritis, salpingitis and ovaritis as sequelæ. Abortions and miscarriages rank next to gonorrhœa as a cause of endometritis. According to many authors it should be placed before gonorrhœa. An abortion is a much more serious matter than a labor at term; but it is generally treated lightly by the laity and even by some physicians. Many women do not go to bed at all after abortions. If they do, it is more often because of weakness from hemorrhage or from a fear of it, than for any other reason. I have often been called to cases with other physicians, and found pieces of retained stinking placenta or membranes, for which condition no other treatment than quinine, ergot and vaginal douches indifferently used, had been given. Of course the same conditions may obtain after a labor at full term, and there are not a few cases of endometritis thus have their origin in perfectly normal labors, but it is usually due to mismanagement during the lying-in period. Retro-displacement of the uterus, by interfering with its circulation, and perhaps by causing poor drainage and retained menstrual fluid, is a frequent cause. Polypi and fibroids of the sub-mucous variety cause endometritis, while there may be intra-mural or sub-peritoneal fibroids, even of enormous size, with little or no bleeding and a comparatively healthy endometrium. The nearer these growths are to the endometrium, the more hemorrhage there will be; and broadly speaking, what will cause uterine hemorrhage will cause endometritis.

The bacteriological causes, according to Winkel, are the streptococcus, staphylococcus, gonococcus and coli communis. This will explain Schultze's idea where he says "in women with a patulous vulva, as often found in multipara, even without a perineal rupture, a leucorrhœal discharge may carry atmospheric germs; and in a similar way the menstrual discharge may act in women with a closed vulva." It may also explain why coition during the menstrual period may set up an endometritis. The

general infectious diseases, which have long been known to be a cause, probably act in the same way.

One of the most constant symptoms is hemorrhage. However all hemorrhages from the womb are not due to endometritis. It may be the result of an inflammatory exudate in the broad ligament, or some cyst or growth of the broad ligament, or an ectopic pregnancy. Montgomery says, "in those cases in which the individual suffers from chronic ovaritis, the tunica albuginæ has become so thickened that it does not readily rupture, and each Graafian follicle matures, forms a small cyst, and may produce prolonged bleeding at each menstrual period."

We may also have uterine hemorrhage from an obstructed portal circulation, from renal disease, and from many of the constitutional diseases. Hemorrhage may occur only at the menstrual periods, when the flow may be profuse or prolonged, or it may be a metrorrhagia. When the endometritis is due to polypi or sub-mucous fibroids, the hemorrhagia is usually a menorrhagia, sometimes a metrorrhagia. The menstrual periods are often irregular and generally anticipate. In the fungoid or granular forms there are also profuse hemorrhages, but they are not so violent as when due to polypi or fibroids. The bleeding is more continuous, one period scarcely being recovered from before the next one begins. This is especially true when there is a retro-deviation, with consequent uterine engorgement. Associated with cervical endometritis there are generally more or less extensive erosions around the os, especially of the posterior lip, the so-called "ulceration" of the older writers. These erosions bleed easily. Even the movement caused by walking, bicycling or running a sewing machine may cause a slight hemorrhage during the inter-menstrual period. Menstruation is usually painful. The pain may continue during the entire menstrual period, although it

generally becomes less after the flow is fully established. This is usually true in acute cases.

There is always more or less profuse leucorrhœa which is worse just before and after the menses. The character of the discharge is pathognomonic. In endometritis it is dense, thick, opaque and tenacious, while in vaginal leucorrhœa it is serous non-tenacious and more often purulent. In the later stages of acute endometritis, there is generally a copious purulent or muco-purulent discharge, which, when the speculum is used, may be seen pouring from a purple gaping os.

Besides the hemorrhage and leucorrhœa there is a sense of weight and pain of a dull aching character in the pelvis, pain in the back located in the sacral region, and a host of reflex neuroses, peculiar to pelvic disease in women. The patient is easily fatigued, has a capricious appetite, becomes a poor sleeper, and is very irritable. She is not inclined to either mental or physical exertion. Finally, from the anæmia, general debility and nervous exhaustion, or from the extension of the inflammatory condition to the tubes and ovaries, the patient becomes a confirmed invalid, spending a large portion of her time in bed or on the couch.

The treatment must be constitutional and local. The general system must be looked after, as well as the special functions. Tonics are generally indicated. Especially must the bowels be kept loose, as constipation in itself at least favors the development of endometritis. Exercise must be regulated. In acute cases the patient must go to bed and have absolute rest. If there are polypi they should be removed. If there are fibroids no local treatment will be curative, and a hysterectomy, Tait's operation, or Martin's operation of ligating the uterine arteries per vaginam is indicated. Fungosities or granular endometritis requires a thorough curetting. This should not be done in an indifferent way, and should, as Dr. Cor-dier says, be classed among the major operations. It must



not be done when there is acute peri-uterine inflammation. The strictest asepsis should be practiced. The patient should be anesthetized, the cervix fixed, enough traction put upon it to straighten the uterine canal, the cervix thoroughly dilated with a steel dilator, and the curetting done with a sharp curette except in acute cases following abortion, when the dull curette is better. I never use tents or graduated sounds. Lately I have always used the hollow rinsing curettes, allowing a stream of hot sterilized water to flow into the uterus while the curetting is being done. This helps to control the hemorrhage and washes out the products of the curetting as fast as they are scraped loose. After the curetting is completed, the irrigation is kept up through the same instrument until the water returns clear, when a uterine canula is introduced and the uterine cavity is packed with a long, narrow strip of iodoform gauze. The packing can be done without the uterine canula, but is more tedious to do, as the hot water causes the cervix to contract to a certain degree, even though the dilatation has been very thorough in the beginning. The canula renders the packing rapid and easy. The gauze is not used for drainage, but for the action of the medicated gauze on the freshly scraped uterine tissues. I believe there is no better drainage than that of the natural uterine canal. After the curetting the patient should be placed in bed and treated much the same as after any other major operation.

When the disease is confined to the cervical endometrium, and entirely different line of treatment is indicated. Applications every week, or each alternate week, of a solution of salicylic acid, one drachm to the ounce of alcohol, glycerine and water carried up to the internal os with a cotton-wrapped applicator, together with depletion with wool tampons soaked in a 10 per cent. solution of ichthyol in glycerine, or boro-glyceride, have given me the best results. I have also used, with good success,

the salicylic acid solution in cases of granular or fungoid corporeal endometritis, when for any reason, I did not want to anesthetise the patient and dilate the cervix. In such cases, the solution should be applied with a Braun's intra-uterine syringe, from five to fifteen minims being injected at one treatment. The solution thus applied will control uterine hemorrhage from almost any cause except abortion. I always carry a bottle of it in my instrument case.

If there is uterine displacement, of course it must be overcome. To me, retaining a retro-displaced uterus in its normal position without resorting to surgery, is one of the most difficult problems with which I am confronted. Pessaries, as a rule, I have found unsatisfactory. A large wool tampon, into which some boracic acid has been incorporated, has given me better results than any other non-surgical procedure. The patient can learn to place it herself, while in the knee-chest position.

In conclusion, I want to mention the great tendency to abortion in this class of cases.

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## **SURGERY.**

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**R. S. BLACK, M.D.,**

*Chairman.*

**G. P. MARNER, M.D.,**

*Secretary.*

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## **SURGERY.**

The Gynecological Section gave way to the Surgical Section. Dr. Black, Chairman, assumed the chair.

Election of officers for the ensuing year was first held. Dr. J. N. Ketchersid, of Hope, was elected Chairman, and Dr. J. W. Felty, of Abilene, Secretary.

Dr. Black delivered the following address:

### **CHAIRMAN'S ADDRESS.**

*Mr. President of the Kansas Medical Society, and Gentlemen of the Surgical Section:* I thank you for the honor of being the Chairman of this Section, and will say to you, I am proud of the position, because I consider that the Surgical Section of the Kansas Medical Society is constituted of the brightest and most able physicians in the State of Kansas, for the reason, that in order to become a surgeon on which the public can rely, one must become thoroughly conversant with anatomy, physiology and pathology. He also must transcend in other knowledge on medical lore; in fact, it is the rule, I believe, that the average surgeon has acquired the position he holds in his community by his having educated and trained himself most thoroughly in all departments pertaining to the practice of medicine. One of the strongest points in a surgeon who excels in all surgical diseases is that of a good diagnostician. Today the surgeon who, by his superior knowledge of morbid anatomy and sur-

gical pathology, is enabled to advise the use of surgical procedures, or recommend the more conservative measures, is the man on whom our profession learns to lean most heavily. So you must admit that while in many other specialties in the practice of our art a young man may fit himself to follow his specialty without having such a complete and general knowledge of the general practice of medicine as the successful surgeon must have.

Darwin, in his writings on "The Origin of Species," says: "The order of nature is from the general to the special," and Dr. Leroy Dibble "hits the bullseye" when he says: "Without the general the special could not exist. The general is so intimately connected with it that it would be hard to draw the line where the 'general' left off and the 'special' began. There is a tendency, unhappily, of many men who have partially fitted themselves for a specialty (I say partially advisedly) to assume superior airs and ignore the order through which they should have come." In surgical specialties this false method of education soon makes itself known; while he who really tries to follow the order of nature is the true surgeon. So I assume that you who sit before me today are men who have passed through all the gradations from the general practitioner to that of the surgeon. In order to do so your every sense must have been alert, as the surgical science of the past few years has made such vast and rapid strides onward that only "he who runs well and faints not" has been enabled to keep abreast of the times. During the past year not many new or startling measures have been introduced into our art, but the perfection of methods heretofore introduced to our notice has been wonderful. For instance, the simplicity and certainty with which abdominal sections are made today excel in every way over the old, asepsis being the rule of the surgeon today instead of the antiseptics of a few short years ago.

Again, the whole time of a surgeon during the past

year could have been profitably taken up in trying to keep up with the surgeons of the world in their advancement in brain and spinal work, and while we must admit that some of their work is unsatisfactory and incomplete, yet most of their operations, especially about the brain, have given wonderfully satisfactory results.

As yet, it is true that in a majority of special cases, operative interference is not justifiable, although with our past year's experience, provided a tumor can be diagnosed, operations should be considered. Tumors are usually favorably located, namely, on the posterior aspect of the cord, where they are readily accessible. In the majority of cases it has been proven they originate from the membranes and are frequently pedunculated.

In the matter of anesthetics, surgeons are awakening to the fact that most of the unfortunate results arising therefrom can be charged to incompetency. Heretofore, to any tyro or student was intrusted the perilous duty of giving anesthetics, the surgeon relying on his ability to operate and watch the patient at the same time. Now, both in France and England, and, I notice with much pleasure, New York, has recognized the great importance of having a person especially trained in the art of the administration of anesthetics, and so you see the rate of mortality is lessened. Surgery has so far elevated herself in the past few years as to be now, by the laity, recognized as one of the certain sciences.

This year, as surgeons of Kansas, we feel reason to be encouraged. Wild, extravagant ideas are gradually being relegated to the past, and conservative, simple and certain surgery is the goal which every surgeon is striving to attain.

We are fortunate enough this year to have with us several noted surgeons from outside our State, and we welcome them as brothers. We meet here for the interchange of ideas, and mutual communication, and to our counsel

we invite others, knowing that what is a pleasure to them will be a benefit to us.

In conclusion, I will express the hope that in the future, as in the past, Kansas surgeons may always be the leading physicians of the country and that peace and harmony may continue to wave her banner proudly over us.

Gentlemen, I thank you for your attention and the honor conferred on me.

We will now proceed with our regular order of business.

Dr. GEO. M. GRAY, Kansas City, Kas., delivered the following paper on

#### APPENDICITIS.

Inflammation of the appendix vermiformis, or appendicitis, is a subject that has received a great amount of attention during the past five years, both from surgeons and physicians. The pathology of the disease has been closely studied, and the information gained from early operation has been of great value in clearing up the pathology, and giving a clear understanding of the pathological condition in the early stage of the disease. From knowledge gained in this manner, and from post mortem examinations, we have learned that affections of the appendix vermiformis are the cause of almost all inflammations of the right iliac fossa, and perityphlitis and ileo-cecal abscess are diseases now known to be secondary to and caused by inflammation of the appendix; and we have also learned that there is no such disease as idiopathic peritonitis, but that all cases of peritonitis starting or having their origin in the region of the caput-coli are, almost without exception, dependent upon a diseased condition of the appendix; that inflammation of the vermiform appendix is of common occurrence is now generally admitted, and observations made on the post mortem table have shown it to have been the seat of inflammation in



about one-third of all subjects examined; this has been one of the strong points advanced by physicians who have contended for the medical treatment for certain forms of inflammation of the appendix, but valuable light has been thrown on this point by Byron Robinson of Chicago. In his recent article in the *Medical Review* entitled "Observations on the Abdominal Viscera in Seventeen Autopsies." Of these cases he found evidences of old peritonitis in the right iliac fossa in twelve out of seventeen cases examined; but on examination of the left iliac fossa he found distinct old peritonitic adhesions twelve times, and says in his report that twelve adult cadavers out of seventeen examined had distinctly marked old peritonitic adhesions over the psoas muscle, where the sigmoid crossed it, and accounts for it by the irritation of the ileo-psoas muscle. If this be true, is it not possible that the inflammations so often observed in the region of the caput-coli in the cadaver is not always the result of old inflammations of the appendix, but caused from the same irritation as that occurring at the same point on the left side? If this observation be true, it is of importance, and will reduce considerably the number known to recover without operation from this affection, for I feel sure that no surgeon or physician who has had an opportunity of observing the pathological condition of the appendix during an attack of appendicitis can be but surprised that so large a number should recover, as seem to be indicated by observations made on the cadavers. Before entering upon the symptomatology and treatment of appendicitis allow me to briefly describe the appendix and its location. It is generally regarded as a functionless organ of the atrophic type, variable in size, length and position; found only in man and the higher apes; entirely surrounded by peritoneum unless it be a small portion at base; located within the abdominal cavity, and generally occupying the right iliac fossa, but in some cases where the cæcum is arrested in its de-

cent, the appendix may be found high up in the region of the liver or gall-bladder; or in other cases it may descend lower than normal and occupy the pelvis, or, even be found to the left of the median line; indeed, in some cases, it may be contained in either a right or left hernia, especially in children. Such a case I saw a few months ago at St. Margaret's Hospital in Doctor Perkins' service; a baby about eighteen months old, with left oblique inguinal hernia, in which there was a sinus leading into the sac. On opening the sac he found the cæcum and appendix incarcerated; the appendix had been the seat of perforative inflammation, with abscess formation, the abscess burrowing through the scrotal tissues, leaving the sinus leading up to it. When the appendix is located in the normal position in the right iliac fossa, the position it may occupy is variable; sometimes occupying a position behind the cæcum, at other times hanging over the brim of the pelvis or out into the median line, the most frequent position being pointing towards the spleen. The length of the appendix varies, being from one to seven inches in length and containing three coats, serous, muscular and mucous; the muscular coat consisting mostly of longitudinal fibres, and contains within a number of closed follicles. Dr. Robinson observed the direction in which the appendix pointed in nine cases and found that in four it pointed toward the spleen, in two toward the liver, and in one toward the middle of the lateral pelvic wall, and one toward the middle of the iliac crest and one toward the iliac spine. He also noted the position of the appendix in twelve cases; it lay behind the cæcum four times, across the psoas muscle five times, and to the right of the psoas muscle three times. He also noted that in the male adult nearly 25 per cent. of appendices hang in the pelvis, and over 25 per cent. in women. A condition that is important to remember, for in this position it becomes much more dangerous than

when in its normal position, where protecting adhesions are more certain to form.

As to different forms of inflammation of the appendix, numerous classifications have been suggested by different observers, such as catarrhal, perforative, ulcerative, etc., I believe that the classification given by Dr. John B. Murphy, of Chicago, indicates more clearly the pathological condition existing in the several forms. His classification is, first, simple pus infection, which produces the catarrhal variety; second, extensive pus infection by the bacillus commune or pyogenic microbe producing gangrene in a greater or less portion of the appendix; third, pressure atrophy, with infection of the appendix, either by fecal concretions or foreign bodies; fourth, retention accumulations from cicatricial contractions, stenosis or obliteration; of these different forms of appendicitis Dr. Murphy says, that from the reports of autopsies collected he finds that in 70 per cent. of the cases there was perforation of the appendix, and that of his own cases collected there was 87 per cent. Simple catarrhal appendicitis, if it exists at all, is rarely brought to the attention of the physician, and still less frequently to that of the surgeon; of 194 cases reported he had but one of this variety, but catarrhal inflammation in cases in which the more severe form has previously existed is not uncommon; but the question of greatest importance to the physician and surgeon in these cases is diagnosis. Can we determine when appendicitis is present? In order to answer this question let us consider the symptoms presented in a case of appendicitis. The first symptom in acute appendicitis is abdominal pain of greater or less severity, referred to the epigastrium or umbilical region; in but few cases is the pain referred to the region of the appendix in the early stage of an acute attack. The attack is generally sudden, without any premonitory symptoms; the pain is usually described as colicky or cramping, and is usually followed in a very short time by nausea and

vomiting. The term "appendicular colic" has been given to this acute pain, and Dr. Fowler says of this term, that he considers it misleading and liable to give rise to indifference on the part of the medical attendant as to the true condition present and the dangers that threaten the patient, as the term colic has generally been applied to purely functional disturbances of the large and small intestines, and that the acute pains of appendicitis are due, on the contrary, to an inflammatory condition which may rapidly involve the entire organ and place the patient's life in the greatest jeopardy, and if the colic be of appendicular origin, then appendicitis in one of its forms is already in progress. Nausea and vomiting occurring coincidentally, or shortly after the abdominal pain, is significant; the vomiting usually ceases when the contents of the stomach has been ejected, and the nausea disappears after a few hours, but may recur on perforation of the appendix or extension of the septic process. The character of the vomit is often of importance as indicating the condition present, as in cases where the general peritoneal cavity is involved the vomited material will be greenish and serous in character. In intestinal paresis the vomited material may be stercoraceous as a result of reversed peristalsis. Constipation usually precedes or accompanies the attack, but is not constant, some cases being preceded or accompanied by diarrhea. Tenderness in the right iliac fossa is an early and marked symptom, and taken in connection with sudden abdominal pain, accompanied with nausea and vomiting, it is the symptom of the greatest importance in arriving at a diagnosis; while the tenderness may be more or less diffused over the fossa, yet, on finger-point pressure one point will be found to be decidedly the most sensitive, and this point will usually correspond to the inflamed appendix; this point is usually found to be in the adult from one and a half to two inches inside of the right anterior superior spinous process of the ileum, on a line drawn from the process to

the umbilicus, this being known as McBurney's point, and marks the exact point of greatest tenderness in a large majority of cases. This point of greatest tenderness will vary somewhat with the position, length and portion of the appendix involved. Fever to some extent is present soon after the attack begins, and varies considerably, but is no indication of the severity of the attack, for we may have a temperature of 103° Fahr. in a case where the appendix is safely walled off from the general peritoneal cavity, and only a temperature of 100° in another case where the appendix is distended and ready to burst with no protecting adhesions. The pulse is usually accelerated and is of more value than the temperature in determining the condition present, for it will indicate the amount of constitutional disturbance, and this will depend to a certain extent upon the amount of peritoneum involved and the form of sepsis present, but as indicating the gravity of the case and determining when an operation is necessary in these cases, as has been claimed by some observers, it is totally unreliable, for we may have a most serious condition present in the appendix and the pulse give no indication of said condition. Tympanitis is not an early symptom of any importance; it may or may not be present, but when present in any marked degree is an unfavorable symptom, indicating intestinal paresis. Rigidity of the muscles on the right side of the abdomen is a constant and valuable symptom; in general peritonitis there will be rigidity of all the abdominal muscles. Chill during the progress of an attack of appendicitis is a symptom indicating either perforation of the appendix or some extension of the septic process, but is not always present. Œdema of the abdominal wall over the region of the appendix is a symptom of some importance as indicating the presence of pus, but is not generally present early in the disease. Tumor can rarely be detected during the first thirty-six hours of the disease, but is usually present and can be detected on deep pres-

sure after this time, and sometimes earlier where the appendix is situated close to or in contact with the anterior abdominal wall; the tumor consists of coils of intestines and sometimes omentum with the appendix bound together with inflammatory exudate for the protection of the general peritoneal cavity. To sum up the symptoms then presented in an acute attack of appendicitis we have only a few that are constant, and these are, first, sudden abdominal pain, general over the abdomen, or referred to the epigastric or umbilical region, soon followed by nausea and vomiting; second, some elevation of temperature and acceleration of pulse; third, tenderness on pressure in right iliac fossa, with greatest point of tenderness on finger-tip pressure at or near McBurney's point; fourth, rigidity of abdominal muscles in region of appendix. These are the symptoms of value and with which we are generally able to make a diagnosis.

As the case advances other symptoms manifest themselves, such as oedema of the abdominal walls over the region of the appendix, tumor, more or less irritability of the bladder may be present, especially in cases where the appendix is long and hanging down into the pelvis. Vaginal examination may be of some service in determining the location of the diseased process, but the information gained by careful history of the case and consideration of the early symptoms, will be of greater value. It is exceedingly difficult in some cases to differentiate between appendicitis, right-sided salpingitis, or pyosalpinx; indeed the appendix may be involved in these inflammations, and a differential diagnosis will be impossible without exploratory laparotomy. The making of an early diagnosis in appendicitis is of the greatest importance, and it seems to me the diagnosis in these cases is usually easy if the case be carefully watched and the administration of opiates withheld; which, if administered, will often so mask the symptoms as to make the diagnosis uncertain; for this reason, opium, in any form

should not be administered until the medical attendant is certain of his diagnosis, and even then it is questionable if the patient is not better off without it. We find, then, that there is a certain group of symptoms present in these cases from which we can, as a rule, say "this is a case of appendicitis," but so far as I know, there is no set of symptoms that will enable us to say, "this is a case that will recover without operation," or "that is a case that will not recover without operation," and consequently we must regard all these cases as very dangerous to life where operation is delayed, and that the sooner operation is performed the better the chances for recovery, for there is now no question but that nearly all of these cases will recover where operation is done early. These cases generally come under the care of the general practitioner first, and on him rests the responsibility of an early and correct diagnosis. As to the medical treatment in these cases, I believe that a saline cathartic should be administered early in the case where constipation is present. Perfect quiet should be enjoined with absolutely liquid diet, with sufficient doses of phenacetine or antikamnia, or if necessary codea to quiet pain, and that removal of the appendix be advised as soon as diagnosis is certain.

*Prognosis*—Dr. Fowler, in writing on the prognosis of appendicitis, says: "The prognosis of appendicitis is unfavorable in cases treated non-operatively, in proportion to the severity of the infection; and in cases treated surgically, in proportion to the delay in instituting operative interference." In 176 fatal cases of perforative inflammation of the appendix collected by Dr. Fitz, 60 died during the first five days, 46 during the first four days, and 28 during the first three days and eight on the second day. These cases show the importance of prompt surgical interference in cases of acute appendicitis. With our present understanding of the pathological condition present in a case of progressive appendicitis, and with a realization of the dangers that threaten the life of our patient,

from infection of the peritoneal cavity, retained mucopus within a constricted appendix, and the rupture of this later into an unprotected peritoneal cavity, ulceration and perforation from foreign bodies contained within the appendix, or from gangrenous conditions of the appendix, and the hopelessness of both medical and surgical treatment of these cases when they have reached the stage or condition of diffuse septic peritonitis; and since there are no certain symptoms by which we can distinguish these cases that may be less dangerous and would recover from the present attack without operative interference, and when we consider the uniformly good results obtained by early operation, it seems to me that our duty is clear, and that we should advise operative interference in all cases of acute progressive appendicitis as soon as the diagnosis is clear. In that form of appendicitis known as recurrent, the best time for operation is during the quiescent stage, and there is less danger in postponing operation in this class of cases.

As to the operative treatment in these cases it must vary to suit the individual case, and the stage of the disease. If the operation is done early, before there is much infection of the peritoneal cavity, the appendix should be sought for and removed, and the cavity simply packed with iodiform gauze. Where there is pus in any quantity about the appendix care should be taken not to infect the general peritoneal cavity, by first, packing sterilized gauze about the appendix so as to prevent the entrance of pus at any point where the peritoneal cavity may have been opened, and the pus should be immediately removed by sponging away with sterilized gauze, no water or antiseptic solutions being used in the wound. The appendix should be removed by placing a ligature around it at the base and a second ligature around the mesentery and cutting it away. Drainage tubes are unnecessary where the abscess cavity is small. The strictest asepsis should be practiced in all these cases, both in



regard to the cleansing of the field of operation, the sterilization of the instruments, sponges, etc., and the cleansing and disinfecting of the operator's hands. In cases that are operated upon late it may be advisable to simply open the abscess and drain. Where the abscess is opened without opening into the general peritoneal cavity, as is possible in some cases, then there would be no objection to cleansing the abscess cavity by irrigation with sterilized water; but where there is any probability of the general peritoneal cavity being opened into, irrigation should be avoided for fear of carrying the infection into the general peritoneal cavity.

The advisability of removing the appendix in these late operations will be a question for the operator to determine. Where there is a large abscess cavity, with the appendix bound down by adhesions, the danger of infection of the general peritoneal cavity that would be incurred by the breaking up of adhesions in removal of the appendix might justify the operator in leaving the appendix, especially where the condition of the patient is not good, as is often the case, and trust to nature to repair the diseased condition by sloughing away of the appendix, or where a sinus may remain, to a second operation when the condition of the patient has sufficiently improved; but where the condition of the patient will permit, I believe it is better to remove the appendix, if possible, even in these late cases, and with proper precautions there is no great danger from infection of the peritoneal cavity by the necessary efforts to remove it.

In operations on chronic recurring appendicitis, when operated upon during the quiescent stage, the appendix should always be removed, and here the manner of removing the appendix should be somewhat different than in cases operated upon during the early stage; here it is better to remove the appendix by making a cuff of the peritoneal coat, stripping it down as you would the integument in a circular amputation; then place ligatures about

the appendix and remove it by cutting the muscular and mucous coats; disinfect the cavity of the cut extremity, turn the cuff back over the stump and suture, thus burying the cut end of the muscular and mucous coats beneath the peritoneal cuff.

In these cases the abdominal wound should be closed and small drainage tubes with strip of gauze to bottom of the wound.

As to the treatment of cases where there is general infection of the peritoneal cavity, or a greater part of it, diffuse septic peritonitis, these cases have generally been regarded as hopeless, and the percentage of recoveries has been small. Indeed the mortality in these cases has been so large that many surgeons have advised non-interference in many of these cases. In the *Medical Record* of March 30, 1895, is an article by Dr. McBurney on the treatment of this class of cases. He reports twenty-four cases on which he has operated during the past two years, of which fourteen recovered. All these cases were treated by incision, irrigation with sterilized salt solution, drainage by strips of gauze and glass drainage tube extending to the most dependent part, but adds that he has had quite a number that he considered to be in too hopeless a condition to justify operative interference, which were allowed to die without operation, but the results he has obtained by this plan of treatment are certainly much better than that obtained by any other method that I know of.

#### DISCUSSION.

Dr. PEERS: A physician in the Cook County Hospital who has investigated over a hundred cases finds that there is a surprising number of cases of inflammation of the cavity which have been overlooked and have recovered without loss of life, and he finds there are three locations in the abdomen particularly liable to this inflammation, viz.: The appendix, the gall bladder and the

sigmoid flexure. He finds that there is a large number of inflammations of these organs that recover. With this fact before us, it seems to me that we should hesitate about saying that every case of appendicitis should be operated for. We ought to be able to find some way of distinguishing these cases so that every case should not be operated upon; but in the general practice we have not things completely under our control. There are some cases that call for operation, and if we could say with certainty, "Your child is going to die," or "this person is going to die unless an operation is performed," our statements would carry great weight; but where we see that patients recover, as they often do, it is humiliating to the physician; but if there were some way of making more accurate diagnosis, so that the physician could say with certainty that a patient would die unless operated upon, it would be more satisfactory to the profession and to all concerned.

Dr. GRAY: I do not know that I have anything to say in conclusion. In regard to the opposition to operation, the reluctance to submit to operation, I believe the patients should be told by the medical attendant that operation is the proper thing, as offering to them the largest chance of recovery. They will not necessarily die; they may recover from several attacks, but as some one has very appropriately said, they never die from but one attack. Of these fifteen cases which I did not have time to report, there were two deaths, resulting from general or diffused septic peritonitis on the fourth and fifth day from the commencement of the attack. The other cases recovered.

Dr. J. N. KETCHERSID delivered the following paper on

#### STRANGULATED HERNIA.

Considering the rapidity with which gangrene often takes place in strangulated hernia, we cannot be too deeply impressed with the danger of spending valuable

time in the trial of methods of inferior efficacy. There is probably no affection attacking our race that is such a menace to life as strangulated hernia; there is certainly none that becomes so fearfully aggravated by delay. That valuable lives have been lost by delaying herniotomy is proven by hundreds of unfortunate examples.

With all our boasted modern improvements in surgery, the mortality of operations on strangulated hernia is very little less than twenty-five years ago.

Why should not operations upon hernia keep abreast with the advance of other branches of our art?

Every practical surgeon knows that the operation of herniotomy is almost absolutely without danger. If properly performed, not more dangerous than an exploratory incision.

It is ice bags, poultices, opium and delay that are keeping up the fearful fatality in this affection. Although we have been taught by a host of the best authorities that delay is dangerous, there are still practitioners all over the country who look upon herniotomy as a recourse that should be resorted to only after the patient has spent hours of intense suffering or his physical condition is such that "something must be done."

The time to operate upon hernia is when a diagnosis of strangulation has been made.

The patient's consent having been obtained for a cutting operation, should taxis fail, an anesthetic is immediately given, and a firm but gentle effort at taxis begun. Provided the bowel has not been long strangulated and no inflammatory condition is present, we may persist in our efforts until we satisfy ourselves that we cannot accomplish a reduction—using, say, from ten to fifteen minutes. If the tumor has become tender and an inflammatory condition, which rapidly ensues in these cases, is present, I believe taxis should be employed with caution and not longer than five or ten minutes. If a bowel has actually been strangulated twelve hours, gan-

grene may be present. When there is any doubt about the condition of the intestine give the patient the benefit of the doubt and do a cutting operation.

Close the operation by an attempt to effect a radical cure.

I do not believe that opium and external applications have any place in the treatment of hernia, except in the relief of pain in cases of unavoidable delay. They have been the cause of hundreds of deaths by encouraging postponement of a simple operation that will give immediate relief if done in time. Birkett says: "We have had to operate on many whose chances of life were absolutely sacrificed by inexcusable delay."

Dr. M. Price, in discussing a paper before the Philadelphia Obstetrical Society, remarks: "What on earth they expect from it (opium) I cannot see. There is not the slightest shadow of doubt in my mind that it never has done any good since its first advocacy—by whom I do not know and I do not want to know; because I consider he has placed thousands in their graves by hiding symptoms of strangulation."

May 2, 1874, about 8 A. M., I was summoned to see B. T., aged 64, previous health good. He had been suffering all night with great pain and vomiting. Had strangulated inguinal hernia of right side. The hernial tumor was large, tense and inflamed. Having administered chloroform, I tried to relieve the patient by taxis, but failing, requested that another physician be sent for. I elevated the hips, gave a hypodermic of morphine and placed warm fomentations over the hernia.

At 4 P.M. I visited the patient with my consultant, a man of several years experience and extensive reputation. Taxis was again tried, resulting in failure. I now insisted on an immediate operation to relieve the strangulation and save the man's life, but my counsel objected and proposed continuing the opium and hot fomentations

till morning, which would be time enough to operate providing a reduction was not accomplished.

I returned the next morning (May 3) and found my patient in a dying condition, pulse quick, irregular, weak and intermittent, breathing shallow, and abdominal swelling greatly increased. Pain had ceased, but very restless, face pale and anxious and voice hollow, tongue and mouth dry, the breath cold, and the smell of the patient cadaverous. Hernial tumor increased in size, hard and dusky red. Patient died 11 A.M.

This is the finale to the majority of cases of so-called conservative surgery. There are but two ways to do anything—one right and the other wrong. The term conservatism is too often used to cover ignorance or cowardice, either of which is an injury to true surgery.

At 1 A.M., April 6, 1891, I was called to see Mrs. D., aged 40, mother of six children, previous health good, strangulated inguinal hernia on right side. Patient was suffering intensely, temperature elevated, pulse rapid, hernial tumor red and very tense.

Patient stated that while returning from a neighbor's house on the evening previous, her "rupture slipped" under her truss and gave her considerable pain. As soon as she came home she went to bed and made an effort to reduce it as she had done on similar occasions before. Failing in her efforts and rapidly becoming worse, I was sent for as above stated. I at once anesthetized the patient and made an effort to reduce the hernia by taxis, but failed. I elevated the pelvis and gave a hypodermic of morphine to relieve the intense suffering and ordered hot fomentations until my return. I went back to my office (a distance of seven miles) and prepared to operate. I procured assistance and was ready at 8 A. M.

By this time the abdomen was considerably swollen, pulse small and rapid, patient suffering less but very restless. After anesthesia, I made a second ineffectual attempt at reduction. I then cut into the sac, and about

nine inches of ileum and a considerable portion of omentum rolled out. The intestine was black, easily torn, covered with ash-colored spots of sphacelation and having putrescent odor. The omentum was darkly congested, but not gangrenous; having been irreducible and adhesions having formed before the strangulation, it received its blood supply from the walls of the sac.

The patient being very weak, and not being able to determine the extent of the gangrene, I divided the constriction and dressed the wound with moist iodoform gauze, and made my patient as comfortable as possible.

The bowel rapidly broke down and an artificial anus was formed. Under opium, quinia and whisky the patient rapidly gained strength notwithstanding her pitiable condition.

On April 9, two days after the herniotomy, I broke up the adhesions of the omentum, ligated and excised it and returned the stump. Removed ten inches of gangrenous ileum, made an end to end anastomosis and returned it. I packed the wound with iodoform gauze and put the patient to bed.

The cut healed rapidly by granulation. Patient made an uninterrupted recovery and is cured of her hernia.

This case illustrates the value of time and the importance of always being prepared to do a cutting operation when summoned to a case of strangulated hernia. If I had been prepared to operate during my first visit I would probably have averted the great danger of gangrene and the necessity of subjecting my patient to an enterectomy.

It also shows the rapidity with which gangrene sometimes occurs and the dangers of taxis even as early as twelve hours.

Besides the above case, I have performed six herniotomies. Of my seven cases four were men, two women and one a child six years old. All recovered.

I have said nothing about methods relating to taxis

and the operation of herniotomy. They are so familiar to all it would be out of place to mention them.

My object in writing this paper is to impress the fact that in strangulated hernia we have a dangerous condition that can be relieved by a simple operation that is not dangerous.

That the custom of prolonged taxis, ice bags and hot fomentations is always dangerous, for every hour that elapses carries the subject of a strangulated hernia nearer and nearer to his grave.

#### DISCUSSION.

Dr. HALLEY: Mr. President, I don't think there is any surgical procedure, perhaps with one exception, and I don't know whether to class that as a surgical procedure, that requires prompter and more energetic treatment than this subject of strangulated hernia. It has been a rule through life with me never to leave a woman until the placenta has been delivered, and never to leave a strangulated hernia until it is relieved, and I believe it is a rule that ought to be emphatically insisted upon in every class room and in every medical society. It is of no use to put hot water, or cold water, or ice, or anything else on a hernia. It is one of the things which must be relieved, or you are going to have a funeral; there is no question about it. There is no use of disguising it. I am heartily in favor of the treatment advocated by the paper. Now, you can sometimes force the hernia back, and leave your patient to die with the hernia still strangulated; that has happened quite often; they die from peritonitis. The hernia may be returned, but it is still strangulated just as much inside of the peritoneal cavity as it was before on the outside. Now, it is a simple operation; one that any man can do with a jack-knife if he has no better tool; every surgeon carries some kind of antiseptics with him, and can make the abdomen sufficiently clean at all times. I think there are very few



physicians who go about nowadays without carrying with them a bottle of antiseptic tablets, of carbolic acid or something of that kind. There is no question that the operation must be done with scrupulous attention to cleanliness, but you don't need to ride twenty or thirty miles for a set of instruments. Every physician carries with him a needle, some silk, and perhaps some catgut. There is no danger of cutting any important blood vessels if a man is at all versed in the anatomy; if he should cut a blood vessel, he can catch it with a pair of pinchers and tie it. Operate quickly; I have seen gangrene result from femoral hernia in nine hours after strangulation. Now, that is very rapid; you don't have time to go far and get a complete paraphernalia of instruments, particularly if the patient lives in the country. A recent strangulation is much more dangerous than an old hernia. If the breach has been recent, the swelling around the neck of the sac will be much greater and the danger from the strangulation will be very much greater. I have nothing but words of praise for the doctor's paper, and I simply want to emphasize what he has so well said. The danger of delay is greater than in any surgical procedure, or perhaps medical procedure. To give a dose of opium may be all right, but it should be immediately followed by chloroform and an operation.

Dr. G. C. PURDUE: I have but a few words to say about strangulated hernia, or about the operation for strangulated hernia. I do not believe we should rely upon chloroform in operations for hernia. I believe that it can be done just as thoroughly, with greater rapidity, and just as safely with a 2 per cent. solution of cocaine injected under the skin. I do not see any reason on earth why we should use anything but cocaine in operations for strangulated hernia if a leg can be amputated with it, or an oophorectomy can be performed with it, which I have seen done.

Dr. SHELTON: I want to say one word in the interests

of ice applications to hernia. While I approve of what Dr. Ketchersid has said, in the main, still there are times when we can use ice to advantage in strangulated hernia. There is a certain time that will elapse oftentimes between the time you determine on an operation and the hour when you will operate, and it is during that time that I believe the mischief is done. Now, then, if you can, by ice applications, stop the process of decomposition that is going on there, you have accomplished something in saving the integrity of the intestine. Only a few weeks ago I saw a case that was saved by ice applications for four or five hours, perhaps more than that, seven or eight hours, prior to the operation, while they were waiting for some one to operate. It does stop the chemical process of decomposition, and if it stops that, if it stops necrosis for the time being, I think you make a mistake in omitting the application of ice. Not only that, but there are undoubtedly cases of strangulated hernia that you can reduce by a judicious application of cold. Of course, warm applications will sometimes do the same thing, but I think, generally, we get better results from the cold. The point I wish to advocate is this, that by judicious application of cold in the stages that you are waiting for operation, you will be able to stop the process of decomposition, and give your patient an advantage that he would not otherwise have.

Dr. BLACK: There is one thing I have thought much about in the last six or eight months and which has been again called to my attention by the paper in regard to hernia and the operative procedure therefor, and that is this: As you heard Dr. Murphy say yesterday, if you place a stethoscope over a hernia and you hear no fluids being passed backward and forward through that strangulated bowel, it is certainly high time for operative procedure, and hot or cold, or any other applications do no good. Prior to that time you may use conservative surgery. Another point that the general practitioner has to con-

tend with is the fact that in a great many cases of strangulated hernia to which he is called taxis has been used, and in these cases, of course, there are more or less adhesions. If there are no adhesions of any considerable extent, the suggestion of the Secretary is all right; but if there are, I think it would be found much safer, and a great deal more satisfactory if you will use anesthetics. Otherwise, when you come to getting that sac loose I think your patient will be very likely to rebel.

J. L. GILBERT, M.D., Topeka, read the following paper:

#### RAREFYING OSTEITIS.

I desire to report a rare and interesting case, and to call attention to some of the conditions found in connection therewith. But, before I proceed to the report, you will pardon me if I review some of the physiological and pathological conditions found in bone, as well as attempt to make myself clear in the title of this paper.

Rarefying osteitis is a condition occurring in bone whereby the osseous tissue is destroyed, or absorbed, and replaced by granulative tissue. Physiologically we find rarefying osteitis occurring in growing bone. After the beginning of ossification, new bone is deposited beneath the periosteum and coincidently absorption, or rarefaction, commences at the center. After a fracture, the Haversian canals at the seat of injury become enlarged from their walls being destroyed by this process, and the previously compact bone becomes spongy and filled with granulative tissue before ossification of the callous commences. It then, in this case, is part of the process of repair. Also a bone wherein the nutrition is arrested, or is necrosed, may be thus removed, if of limited extent and is not eliminated by other means. Tubercular and syphilitic as well as some other myotic conditions inducing a chronic inflammatory condition in osseous structures, are accompanied by a rarefying osteitis occurring

as a secondary process immediately preceding or surrounding the inflammatory areas. Pressure on bone, as from tumors and aneurisms, leads to absorption of the osseous structures.

Rarefying osteitis is then a rarefaction by absorption of the matrix of the bone. This is accomplished under all conditions by large or small mono-nucleated or multi-nucleated cells called osteoclasts. Under all conditions of the bone, physiological or pathological, when bone is being destroyed, we find these cells present, normally in the little depressions, Howship's lacunæ on their outer surfaces. The manner in which these cells act is by eroding the matrix. The cell seems to fasten itself to the matrix and the latter slowly disappears in front of it, the cell then sinking deeper into the matrix. Whether this is accomplished by a cellular ferment acting locally on the matrix, or by a phagocytic action of the cell itself, I am unable to determine; but probably by both methods. By this action of the cells, the matrix soon assumes a notched border. That portion of the matrix next to the osteoclast presents a hyaline appearance, suggesting that some chemical agent had acted on the firmer structures, and the notched outline suggesting a vital action of the cell itself.

The cells, or osteoclasts, are of various sizes and contain one or more nuclei. Our works on histology, both normal and morbid describe the predominating form of osteoclast as multi-nucleated. This I think is not always true, as I can demonstrate in sections of bone removed from the case which I will relate. In this the predominating form is a large mono-nucleated cell. But under normal conditions, where destruction is occurring more slowly and where nutrition is maintained at a different standard, then we do find the multi-nucleated or giant cell engaged in this process. If we accept the views of some histologists in regard to formation of the giant cell, viz.: the coalescence of the protoplasm of adjoining cells

without destruction or union of their nuclei, then we are able to see why under conditions occurring normally, when nutrition differs in quantity and quality from pathological conditions, we may have such cells formed. I believe the first stage, in the life history of these giant cells, is the small cell, and that the continuation of the process of rarefaction once started depends upon the continued reproduction of the small cell; for it is not known that giant cells are capable of reproducing giant cells. True, the individual smaller cell is not capable of disposing of as much osseous tissue as its larger sister.

Succeeding the process of rarefaction and following closely in its wake, we have new formed tissue of denser or looser structure, which in normal conditions becomes the marrow, and in pathological conditions is a form of granulative tissue. Later, if placed under favorable conditions of nutrition, ossification instead of rarefaction may be established. Ossification may commence from the proliferation of osteoclasts from the present osseous tissue forming next to the granulative tissue with the succeeding deposit of osseous lamella; or we may have ossification succeeding to the formation of fibrous tissue and cartilage. Both of which conditions may be seen after fracture at some stage in the process of repair, and the latter of which I can demonstrate in connection with this case.

Why we have the cells, osteoclasts, devouring by their action cells and firm tissues, as we have in bone, I am unable to express a definite opinion. It is my belief that through some agency with which we are not always familiar, the nutrition of the firmer elements is altered and therefore their physiological resistance is diminished, and that inherent attribute which all physiological tissues possess whereby neighboring tissues lie side by side without invading the other, is destroyed, and the stronger, well nourished, embryonal connective tissue cells take the place of the more poorly nourished. The osteoclasts,

I believe, do not exist in the physiological condition as cells whose only function is the destruction of bone. Neither do I believe that these cells are always the progeny of pre-existing osteoclasts; but I do believe that any cell capable of phagocytic action may become an osteoclast. Fixed tissue cells and leucocytes in other locations where absorption is occurring in an area of tissue, may become phagocytes. If so, why not in bone? It can be demonstrated in bone undergoing absorption that the leucocytes may be engaged as osteoclasts. If this be true, then I will say that the osteoclasts are derived from connective tissue sources, and only exist when nature demands the removal of improperly nourished bone.

The causes which lead to a rarefying osteitis as a pathological process, are not well understood. Rarefying osteitis may and does occur after traumatism, as a secondary condition to the infective *granulomata* involving bone, and, rarely, as a primary condition from so-called idiopathic causes.

Having thus called attention to some of the points in the general pathology of rarefying osteitis, I wish to relate the following case and present specimens and drawings in order to illustrate it:

N. H—, male, age 18, gave following history: As a child to the age of six years was as other children; at this time he passed through a severe attack of diphtheria to be followed by a septic sequela. After this time he complained of pains of an aching character in both tibiae and in the right radius, not constantly, but at longer or shorter periods, and the tibiae became inflamed but not ulcerated. He continued to grow very rapidly and no thought was taken of the pains in the legs, they being ascribed to "growing pains." At the age of fourteen it was noticed that the tibia of either leg was curved anteriorly, enlarged, roughened or nodular and deformed. He became tired very easily and was not able to stand exercise as other boys on account of the

aching pains. Slight traumatisms such as other boys received and never noticed, would cause him excruciating pain. When he had passed his seventeenth birthday the skin over the tibiæ became inflamed and ulcerated, and he commenced to lose flesh. Thinking a change of climate would benefit him he went to Colorado. He did not improve, but on the contrary lost strength and flesh.

In April, 1893, he was brought to Topeka, where, in consultation with Dr. Ward, he was examined. The examination showed a boy 18 years of age, average height; weight about 105 pounds; emaciated and very weak. He gave no history of so-called hereditary disease—the family, as I have determined, is a healthy one. His temperature was 101° pulse 120. Examination of chest, except a protrusion of his sternum as well as other organs, negative. Examination of tibiæ showed enlargement and deformity, with ulcerations on anterior surface of left tibia and inflammation of skin over the right. By probing the ulcers on left tibia necrosed bone could be felt, and ulcerated channels could be detected leading deep into the bone. Osteitis was diagnosed, and operation advised and accepted.

April 25 operation was performed by Drs. Ward, Rodgers and myself. At this operation it was found that the periosteum of the left tibia was much thickened and numerous channels led into the depths of the bone. The bone after much difficulty was sawed and chiseled away until it was thought that all diseased bone had been removed. The bone removed was very hard, and no marrow cavity could be found. The area of diseased and removed bone extended from the tubercle of the tibia to near the ankle joint. The operation having been prolonged and the patient in a very weak condition, it was thought best to wait a few days before attempting to do anything for the right leg. He was then put on supportive treatment, and five days later, April 27, a similar operation was undertaken for the removal of the diseased

bone in the right tibia. This bone, though not exhibiting such pronounced external symptoms as the left, was in a much worse condition. The bone showed the same condition as the left, and it was also sawed and chiseled away. The wounds made by operation were allowed to heal by granulation on account of the septic condition existing.

On May 16, it having been determined that a small area the size of a ten-cent piece was not granulating, a small operation was undertaken for its removal. From this time the wounds did nicely, and by the middle of July were entirely healed. The patient was apparently entirely well. After the operation his pulse dropped to normal and his temperature faded away. He improved rapidly and in July weighed 130 pounds, a gain of 25 pounds. He considered himself well, and although cautioned against violent exercise, he seemed to have forgotten this, and while engaged in playing ball he injured his right leg. Inflammation ensued, followed by ulceration.

October 10 he again consulted us, and by probing diseased bone could be felt in the lower third of the right tibia. His pulse and temperature was elevated. Again the diseased bone was apparently removed. The wound healed, but soon broke out afresh, and the patient was emaciated and weak.

December 4 amputation was performed at junction of middle with upper third. This did not seem to remove all of the diseased bone, and although the amount at the end of the stump, about the size of a cherry, was curetted away, this did not check the process, and a second amputation, January 27, 1894, was made above the knee.

At this time there has been no return of the trouble in this limb.

On May 11, 1894, a small ulcer having formed in the upper third of left tibia, a slight operation under cocaine



was done, and a small bit of diseased bone was drilled away.

At this time, one year after his last operation, we find him strong and well, weighing 130 pounds, wearing an artificial limb; doing the work of a station agent, riding a bicycle, and enjoying life as only one can who has been relieved of a great load of suffering.

Nothing was promised this boy but amputation and possible loss of life. Yet it was determined to save all that was possible. The operation for chiseling away the diseased bone was against our judgment, but we thought we would not be justified in amputating until other means had been tried and had failed. We recognized that a poor natural leg is better than no leg at all, and we resolved to save all that we could.

I will now present two specimen and call attention to some of the pathological conditions found:

*Specimen No. 1.*—Blocks of dried bone removed from left tibia. Notice the roughened, eburnated external surface; the porous spongy internus; also the channels leading into the bone—the areas of absorption.

*Specimen No. 2.*—Stump after first amputation. Notice the process of rarefaction extending from the end of the tibial stem upward toward the knee. This is soft and filled with granulative tissue. This, also, shows the point where the cherry-sized area was curetted away at the time of the first amputation. Notice the absence of marrow cavity.

Microscopical sections of the bone at each of these operations shows the same pathological conditions present in each.

The periosteum was thickened as a result of the periostitis. The channels were discharging pus. No bacteriological examination was made of the granulative tissue, but sections of hardened tissue do not show bacteria in the deeper structures. I am of the opinion that the periostitis was a secondary inflammation caused by

pus-forming bacteria gaining entrance to the channels opening through the skin.

I believe this case of rarefying osteitis is a primary process having its origin in the severe septic attack of diphtheria. It is well known that the toxins of diphtheria acting on tissues will alter the biological character of the cells, and especially of connective and vascular structures. I believe the attack of diphtheria led to nutritive changes in these tibiae, and that rarefaction succeeded it. If you will examine specimen No. 1 you notice the hard eburnated character of the firm bone. I think periods of rarefaction and ossification—condensing osteitis or osteosclerosis—succeeded each other according as to the supply of nutrition, and that finally nutrition could not be furnished in sufficient amount to supply the large amount of osseous structure formed. Nutrition to the osseous structure was probably arrested, partly from the osteosclerosis on the outer surfaces, and interference with the blood supply from the medulla; this leading eventually to the absorption of these poorly nourished structures.

The process of absorption begins around the Haversian canals; these are enlarged and filled with granulative tissue. The blood-vessels are also enlarged and embryonal in character.

From the Haversian canal the process extends until the entire Haversian system is absorbed. By this absorption of adjoining systems a coalescence of the areas of granulative tissue will take place, and a cavity filled with embryonal tissue will be the result. In the embryonal tissues bits of unabsorbed bone may be found.

In none of the sections made could there be found cystic cavities of any description. In none of these sections involving the destructive process could there be found any other tissue than embryonal, thus differing from a physiological absorption.

I have detailed all of the prominent points in connection with the clinical and pathological conditions found

in this case. I have tried to make plain some of the intricate points in the histology. Now I wish to say a few words in a general way.

While this case comes under the nomenclature of the so-called idiopathic diseases, yet I think it should be traced to diphtheria; and I believe that at some future date the word idiopathic will be stricken from the list, not only of this condition, but of others. The term rarefying osteitis in connection with this case I think is a misnomer. It implies an inflammation, which in physiological conditions does not exist, and in this case only occurred after infection with pus microbes. The better term would be osteo-rarefaction.

#### DISCUSSION.

Dr. LANE: I feel perfectly competent to open the discussion, but I don't feel competent to discuss the paper. There is, however, one point in regard to the character and origin of these osteoclasts that I want to mention. It seems to me that what the doctor says must be pure assumption on his part. I think, ladies and gentlemen, that we ought to keep constantly in mind that pathological processes are modifications of physiological processes; they are perverted physiology. You have here a perverted physiology. I presume in the pictures, none of which I have seen, the doctor shows you the work of the osteoclasts. I do not think, since the time of Thomas, anyhow, when the labor done by the osteoclasts was marked out in the physiological processes, that any one has been able to distinguish between osteoclasts and osteoblasts; if so, the doctor has failed to tell us who it is. The fact has certainly failed to come under my notice. It is said that the osteoclasts are very liable to be poly-nucleated. I agree with this under certain circumstances, and that is where they are doing their physiological work under the excitation of injury, where you have polynuclear cells undergoing rapid proliferation

on account of the necessity, perhaps, of great work to be done. Now, what the directing agency was, or the starting impulse was that made this bone rarefaction that the doctor speaks of, of course we don't know; we have always called it idiopathic origin, and I am willing to agree with the doctor, for want of a better explanation, that it has its origin in some dyscrasia of the system induced by the toxins of diphtheria. If I understood the doctor aright, he said that the osteoclasts, where the process was slow, were apt to be polynuclear. Did I so understand you, doctor?

Dr. GILBERT: Yes, sir.

Dr. LANE: If that be the case, it is contrary to other pathological processes. Where you have polynuclear cells you have rapidity of action; it means rapid proliferation of cell tissue; where you have chronic cases, you have mononuclear cells, not only osteoclasts, but other constructive cells. He speaks of these osteoclasts as being of connective tissue origin. That would depend entirely upon the origin of the particular formation of bone, whether it be of connective tissue origin, as we have in the formation of the backbones, for instance, or whether it be the conversion of cartilages into bone, as we have by a building up and tearing down process where we have osteoclasts doing their work as a physiological process, repeated precisely, under modifications, in a pathological process. The work is physiological, though modified.

Dr. GILBERT closed the discussion: Mr. President, in regard to the difference between osteoclasts and osteoblasts, the individual cell, I think, cannot always be distinguished, but they can be distinguished if you will observe what they are doing. If they occur in these little pits or depressions, the inference would be that they are osteoclasts; if they are being built up into new bone, they are osteoblasts. In regard to polynuclear cells indicating rapidity of action, I think that is not always true.

For instance, in the small round-celled sarcoma, the most malignant growth known, whose rapidity of action is well known to all of you, we do not find polynuclear cells; neither do we always find polynuclear cells in the large spindle-celled varieties, and it has been my experience in examining tissues in which there was rapid growth that polynuclear cells were not found. Now, then, in other places, in mild sarcomatous conditions that are slow of growth, you do find polynuclear cells sometimes very abundant. Again you find polynuclear cells in tubercular lesions where there is always rapid growth. Now, as to osteoblasts being of connective tissue origin: They are undoubtedly of that origin and none other. These structures are derived from meso-blastic structures; bone from the same source; cartilage from the same source; fibrous tissue from the same source; the lymphatic vessels and glands; the blood itself and all the cells pertaining to the blood are derived from meso-blastic structures; we call them connective tissue, and therefore I say the osteoblasts are connective tissue structures.

L. REYNOLDS, M.D., Horton. Kas., read the following paper on

#### GUNSHOT INJURIES.

I am prompted to bring this subject before this society because it is one of the most practical which we, as general practitioners, can consider. Only the most general consideration of the subject can be thought of in this paper. None of us are apt to escape a call sooner or later to treat someone who has been accidentally, or otherwise, shot, consequently we ought to bear in mind the indications, especially as regards cleanliness.

Since the fate of the wound and the life of the man depends upon him who first sees him, it is very important that the first service should be of the most careful and judicious kind.

No amount of after care or skill can counteract the ill effect of a careless first handling.

A wound may, and usually does, after a few days, fortify against infection, but nature's resistance is at the lowest ebb immediately after the injury, hence the first dressing is the all-important one.

When a ball has penetrated to and lodged in an inaccessible part, many physicians allow themselves to be misled by popular clamor to search unnecessarily and in an unwarranted way for the bullet. For various reasons a large proportion of gunshot injuries are such that a reckless cutting or probing after the ball is more dangerous than the original injury.

When a bullet has penetrated the tissues it has usually done all the harm it can do, and its removal will be of no real advantage to the patient's wound. An aseptic bullet will soon encyst and is very unlikely to cause any further trouble.

The general public may magnify the skill of him who obtains the bullet, even though he fatally infects the wound in so doing.

So thoroughly is the idea that you must find the bullet at all hazards grounded in the minds of laymen and, I'm sorry to say, in the minds of some surgeons whose knowledge is somewhat ancient, that the modern surgeon frequently has a combat to protect the patient from a vigorous and uncalled-for search after the bullet.

Gunshot wounds, I believe from experience, are ordinarily safely aseptic, the manufacture of the balls rendering them free from microbes; besides, the process of firing impairs the vitality of those germs subsequently coming in contact with the bullets.

The greatest danger that necessarily complicates many gunshot wounds is the carrying of shreds of clothing and other foreign matter with the bullet.

Pieces of clothing are much more apt to infect a wound than the ball, although the vitality of the tissues may

resist even these, for I have seen a piece of dry goods imbedded with a bullet in the soft tissues remain some time without any suppuration or inflammation. The treatment of gunshot injuries, where no viscus is injured, should, with few exceptions, be expectant. That is to say, a clean dressing for protection from infection awaiting developments, for if the wound is aseptic the recovery will be rapid; and should suppuration follow, a foreign body may be more efficiently searched for than primarily. It will be time enough to operate for its removal when such complication develops.

All wounded vessels of importance should be exposed and tied or twisted.

There could be no objection to removing a bullet where plainly accessible, bearing in mind that its removal is a comparatively unimportant part of the treatment, and carefully avoiding any contamination of the wound.

This expectant treatment should apply as well when a joint is entered, as such wounds are not necessarily serious, if clean.

The first thing ordinarily to be done in treating a gunshot injury is to thoroughly clean the wound and the surroundings. This had better be done, first, by soap and water, followed by the application of an antiseptic, giving it time to act by prolonged contact.

Most thorough cleanliness is the sheet anchor in the treatment of these wounds, because there is always present some devitalized tissues which invite infection by acting as a culture medium for germ development.

A few days of careful treatment by clean dressing will usually render the wound comparatively safe against infection from without by establishing a bar of granulations.

By the use of antiseptics I do not wish to be understood that plunging the hands and instruments beneath the surface of some germicidal solution and immediately removing them will do any good.

A weak solution only is advisable in a fresh wound. A strong solution causes a superficial necrosis which in turn favors suppuration.

The best process, in my opinion, for sterilizing instruments is by boiling them, adding a little carbonate of soda to the water to protect them from corrosion or rust.

The hands, which cannot be boiled, can best be made clean by thorough scrubbing with soap and water followed by alcohol.

The wound may be quickly surrounded by fresh laundered towels wet with a germicidal solution to prevent contact of appliances with dirty surroundings.

Habit is a strong thing, and we ought to contract the habit of surgical cleanliness. Much careful practice establishes this habit, making it simple and easy.

The following cases will illustrate briefly the treatment advocated.

*Shotgun Injuries*—H. G., aged 18, shot accidentally by an associate at short range. The entire charge, including several thicknesses of clothing, penetrated his right thigh from without inward, about six inches below the great trochanter, passing between the femur and femoral artery. The entire mass lodged beneath the skin and muscle of the inner surface of the thigh where all but a few stray shot were, a few days later, removed. Antiseptic treatment was carefully applied, but suppuration, as was expected with such a mass, soon followed, more plainly locating the point at which the foreign body was most accessible.

He made a perfect recovery, no defect of any kind remaining.

F. C. aged 15 shotgun discharged while he held its muzzle in his right hand. The explosion tore open the anterior surface of the wrist joint, removing a part of the joint structure including a part of one of the carpal bones.



The balance of the charge spent its force on his right side, causing a slough of skin and fascia.

Careful thorough washing with soap and water followed by antiseptic irrigation and dressing, saved the joint with good motion.

T. C., aged about 40. Shotgun "went off" while he held it in his left hand, muzzle toward and near left side of his chest. The entire load entered near the anterior extremity of seventh rib and followed it closely to its dorsal extremity, where the charge, clothing and wads were plainly accessible and immediately removed.

No defect followed the healing of the wound.

*Bullet Wounds.*—C. S., aged 13. A 22-calibre ball entered and imbedded in muscles of left leg. Under antiseptic dressing, the ball encysted and remained without harm to the limb.

R. W., aged 30. A 22-calibre accidentally entered anterior surface of left wrist, entering the joint. Thorough cleanliness, followed by an antiseptic dressing, saved the joint. No inflammatory or septic trouble followed.

C. H., aged 28 was shot from behind, the 32-calibre ball entering his tissues over and to the left side of the sacrum.

The usual dressing was applied and the ball allowed to remain. Nothing but a very temporary disability resulted.

A. E., aged 9. Shot by a target gun at short range. The ball entered the skull three-fourths of an inch above the right supraorbital arch and one and one-fourth inches to the right of the median line, passing horizontally backward through the entire right hemisphere, lodging in the occipital region. As it was thought the boy would soon die, nothing beyond cleansing and dressing the external wound was attempted.

After a few days the dressing was removed and a drainage tube six inches long, soft rubber, was inserted the

entire length of the wound, through which irrigation with boracic acid solution was done twice daily. Some blood, brain matter and finally pus discharged. Wound healed in six weeks. The left hemiplegia which immediately followed the receipt of the wound, gradually improved till he was able to walk and run, but with a certain amount of defective motion. The left arm can be used to some extent, but its motion is more defective than that of the leg. This injury occurred about eighteen months ago. The boy goes to school, his intellect never seeming to suffer any. The ball remains in the brain.

R. McQ., aged 25. A 32-calibre entered anterior surface of one leg a little above its center. An antiseptic dressing was applied after cleansing surface. A few days later the bullet was felt near the ankle joint where a piece of patient's pants was imbedded and removed with it. No inflammation or suppuration had developed.

Mrs. P., aged 28, was shot twice by 32-calibre balls, the first entering over the anterior surface of left humerus about two inches below the shoulder joint, glancing downward under the posterior fold of the axilla, lodging in her left side.

The second ball entered the left side of her neck at the apex of the left mastoid process passing between the carotid artery and angle of lower jaw diagonally across the mouth, breaking the alveolar process and removing four teeth.

The first wound healed without suppuration at its entrance, but an abscess developed in the track of the bullet due, very likely, to clothing carried into the wound by the ball.

This abscess was opened, drained, and washed out, the irrigation being repeated once daily. The bullet was never found. A great deal of pus and debris was washed out which, no doubt, included particles of clothing which had found lodgment there. The second, or neck wound,

healed without suppuration except the wound in the jaw, where a protective dressing could not be used. She has made a good recovery minus the teeth and piece of alveolar process, which can probably be replaced by a dentist.

L. F. C., aged about 25, was shot twice by same revolver on same night as Mrs. P., one ball transfixing soft tissues of his right forearm. The other transfixed left chest muscles, entering near left nipple, and lodged beneath the skin in the axilla, where it was immediately removed.

The wound healed promptly, under clean dressings, and caused very little pain or inconvenience.

The last case I wish to report was that of Wm. E., aged 18, who was shot in left groin, the ball entering and passing diagonally backward across the abdominal cavity, lodging in region of right ilium.

This occurred in a neighboring town, and as I had no knowledge of the nature of the wound before my arrival went unprepared to open the abdomen. Before operation could be arranged for he went into collapse from internal hemorrhage and died in eighteen hours after the receipt of the injury.

I believe in opening the abdominal cavity in all penetrating wounds, exposing and dealing intelligently with whatever is found. This should be done at the earliest possible moment, because this is the source of all hope. Irrigation and drainage will usually be required to secure success.

#### DISCUSSION.

Dr. BUNN: I would like to emphasize the importance of opening the abdominal cavity in cases of gunshot injury in which the course of the ball can be accurately determined. A case came under my observation some time ago in which there was a gunshot wound in the right groin. The wound was probed, and the course of the bullet was such as to lead the surgeons to believe it

had passed around the abdominal muscles and was lost in the tissues of the back. It was decided not to operate. There was no shock. The next day the gentleman was reported better. The second day—well, after seventy-two hours, alarming symptoms supervened, and the patient died of peritonitis. Post mortem revealed the colon injured in three places.

Dr. LANE: I want to commend the doctor on his general good common sense in the management of these cases, and to indorse what the doctor said in regard to the abdomen. I am very much interested in gunshot wounds in the cranium, and for that reason I want to speak before Dr. Halley. I have a case now under my observation that is interesting in many particulars. I think it is now about eleven weeks since this woman shot herself with, I think, a 38-calibre revolver. There was a cross on her forehead—an incised wound. It was believed at the time by the physician who examined her that this wound in the integument was made with a knife, and the pistol put in the center of the cross and fired; there was a depression of the left orbital plate; it is still very much depressed; the right orbital plate protrudes as much as a quarter of an inch farther than the left. The wound is, I think, exactly in the center of the frontal bone. It was very large, the right frontal eminence being thrown outward by the explosive force. Many pieces of broken bone were taken from the immediate vicinity of the wound; the opening through the skull was large enough to admit the end of a man's thumb, a very peculiar wound, it seems to me. There is at present a wound four inches and five-eighths deep, and we still amuse ourselves by passing a probe into it. The day before I came over here I saw it, and am quite certain there is a piece of bone in that wound three or four inches from the surface. The wound ranges directly backward and slightly upward, and perhaps an inch to the left. There was complete aphasia; the patient is slowly learning words

now. There was right hemiplegia, and the patient was in a very critical condition for some weeks, but for six or seven weeks she has been doing very well, and has been able to do even some housework for the last two or three weeks. The case has been of unusual interest so far as the aphasia is concerned. I wish to ask what we had better do with these bones that are still there; what we had better do in regard to probing, the bullet being lodged back in the left occipital region, or at least that is the direction of the wound. We are doing nothing but getting impatient.

Dr. HALLEY: I was very much interested in the paper, particularly from the standpoint of its conservatism, and it is for that reason that I rise, more to indorse the views of the speaker than to offer any new suggestions. The fashion has been in all surgical work for the past ten years, whenever a man was shot, to go after the ball, no matter where you had to go. The great desideratum, both for the glory of the surgeon and the good of the patient, was to get the ball. Now, I think a reaction has taken place in this direction. I do not think it is good practice to open the abdomen or any of the cavities under all circumstances in gunshot wounds. A 22-calibre pistol ball may go through portions of the intestinal tract without doing any special harm, provided the intestines are kept perfectly quiet for a short time, say forty-eight hours, and this can always be done. I have twice treated gunshot wounds of the stomach where injury was unquestioned, large quantities of blood being vomited, and the bullet wound showing over the stomach, the range being directly backwards, without doing a laparotomy or attempting anything except to keep the patient perfectly quiet for the first forty-eight hours. The reason for that is that the mucous membrane of the stomach is exceedingly thick, and if you make a punctured wound with a small bullet it will become sealed up in a very short time. Again, when gunshot wounds are made from before back-

wards in the upper half of the abdominal cavity, it is not always good surgery to open the abdominal cavity, because there is a chance for the intestines not to be wounded, unless there is great shock, or peritoneal symptoms indicative of extravasation having taken place, it is probable that wounding of the intestines has not taken place. That is not true, however, of wounds made transversely to the axis of the body, or to wounds made by a shotgun. I believe that in every case of that kind, it is good surgery to open the abdominal cavity. A bullet can scarcely traverse the abdominal cavity transversely without cutting the intestines in a number of places. Neither can a shotgun be discharged into the abdominal cavity without wounding extensively the contents of the abdomen and the intestinal canal; therefore, in these cases I think it is as well to lay it down as a rule that the abdomen should be opened. Again, it is not good surgery to open up the thoracic cavity in every case of wounding. If the wounding has been done high up, there is but little danger of any very serious results following, unless it be from the wounding of some large vessel. I remember treating a man a good many years ago, before the days of antiseptic surgery, who was shot through the chest twice with a 45-calibre pistol, making tremendous holes through his chest. He was a bartender in a saloon, a rather rough fellow but he got well without any special trouble. We used cold water dressings and kept the patient on a restricted diet for awhile. I treated another case that was shot with a charge of shot from a smooth-bore rifle at a very short range, about ten or twelve feet, the shot going entirely through the upper part of the chest from behind to the front; there were extensive hemorrhages, but no bad symptoms followed, and the patient made a non-interrupted recovery. The pleural cavity did not appear to be filled, or if it was filled it drained very rapidly. Another point I wish to make is that wounds in which there is a possibility of perforation

of the colon are not necessarily fatal. I remember a negro man, long before the days of antiseptic surgery, who was shot from behind forwards, the bullet going through the crest of the ileum, ranging almost transversely to the axis of the body. There was a foecal discharge from the wound when I saw him the second day after the shooting. The ball had cut so much of the crest of the ileum off that it was entirely loose. He was either shot with an old Spencer rifle or with a 45-calibre pistol. The boy had a good deal of peritoneal inflammation, but it was entirely localized, and for something like six weeks or two months after the injury there was foecal discharge from the wound. The crest of the ileum was removed by the ordinary process, and the patient recovered without any special trouble. So it is not necessarily fatal when the intestine is perforated. When a wound is made through the center of the abdomen with a shotgun or a large pistol, I think the surgeon is warranted in opening the abdominal cavity and searching for either bleeding or wounded intestines. In relation to the case that Dr. Lane speaks of, I think if the bone can be distinctly felt it would be good surgery to take a pair of forceps and remove it. It is probably not very deeply imbedded there, and perhaps could be removed with comparative ease. I would, however, be very conservative about that.

Here the Surgical Section arose and adjourned *sine die*.





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## OPHTHALMOLOGY & OTOTOLOGY.

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H. Z. GILL, M.D.,  
*Chairman.*

W. W. CAMPBELL, M.D.,  
*Secretary.*

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## OPHTHALMOLOGY AND OTOTOLOGY.

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The Section of Ophthalmology and Otology convened, Dr. H. Z. Gill, Chairman, presiding.

An election of officers of the Section for the ensuing year resulted in the election of Dr. W. E. McVey as Chairman, and Dr. J. W. May as Secretary.

Dr. H. Z. Gill, Pittsburg, Kas., Chairman, delivered the following paper:

### REPORT ON OPHTHALMOLOGY AND OTOTOLOGY.

Ophthalmologists and otologists are doing better work from year to year. The period of 1894 and the first quarter of 1895 has been no exception in this regard to other years. While there has been nothing especially new or startling to record, yet many questions have been re-examined with much care in all the details of cause and treatment.

In the operation for cataract, the question as to whether an iridectomy should or should not be made is now on trial. Some able operators affirm that the dangers of the operation from resulting iritis are increased by the accompanying iridectomy, while others allege that the principal operation without iridectomy gives a more brilliant result; and they go so far as to hold that the dangers are not increased by omitting the iridectomy. It seems to me that the most that can at present be stated is that the subject is *sub judice*.

The treatment of trachoma (granular lids) is far from satisfactory at this date. We are fully aware of what is claimed by some of the principal promoters of the crushing and scrubbing (gratage) methods. But still many operators of large experience report that they fail to obtain the same favorable results as the former advocates of these new methods. We can say that much is yet to be done before a satisfactory method, considering time and method of procedure, shall have been reached.

In my experience, more recently, the bichloride of mercury, 1-500, has given me much satisfaction in most cases. In the chronic form of granular lids, (trachomatous, at least in the beginning,) constitutional measures must not be neglected.

*Ophthalmia Neonatorum.*—Ophthalmia neonatorum being a disease so frequently destructive to sight, and such a large percentage of the blindness of those under twenty years of age being the unfortunate victims of this disease, it is very plainly a most important question whether more can be done than is being done to reduce the rate of blindness, by either prophylaxis, or by treatment.

While it is claimed, and we think correctly so, that the disease under consideration may arise from common causes of inflammation; yet the vast majority of cases must be ascribed to specific origin—the presence of Neisser's microbe. This latter being the consensus of opinion, certain conclusions as to prevention and cure naturally follow.

The means used for prevention are: Nitrate of silver, first systematically used, I believe, by Crede, of Leipsic. The standard strength is two per cent. (9.1 grains to the ounce of water) the lids having been previously cleansed and dried, one or two drops is put into the conjunctival sac very soon after birth.

Some very good authorities, in recent reports, recommend a weaker solution as being effective. Budin, of Paris, (*Annual of U. Med. Science*, Vol. IV, B. 55, 1894.)

uses a solution, 1 part to 150 (two-thirds of one per cent.), and reports therefrom very satisfactory results—only one case having the disease in 665 so treated. The eyes of the infants were cleansed immediately after birth, and the silver solution instilled before the umbilical cord was cut. Phillips, of Savannah, has found a 5-grain solution of sufficient strength.

Since the publication of MacKenzie's great work, forty years ago, have we advanced very much in the treatment of this disease?

Yes; but more in preventive measures than in treatment properly speaking. The great wisdom manifested in the practical suggestions and application of preventive measures by men of such large clinical experience, is indeed instructive to us even in this advanced decade. The use of microbicide, corrosive sublimate, without a knowledge of the microbe (*MacKenzie*); the power of dilution and cleanliness, without a definite notion of the poison or of Neisser's micrococcus (*Wells*), give abundant proof of the keen careful clinical observer and successful practitioner. Our able colleague and friend, Prof. Minney, in his report on this subject last year, did not fail to emphasize, in a separate paragraph, the supreme importance of "Dilution and Cleanliness." Does he, or do we, believe as fully in the destructive effect of dilution as did Soelberg Wells when he declared that the contagious power of the discharge is lost altogether when it is diluted with about one hundred parts of water (*Wells, p. 46, Am. Ed., 1873*). Dr. Minney's report would indicate considerable faith in that direction; and I am ready to repeat (what I have often stated elsewhere) the destructive influence of dilution on all contagious poisons; and thus still find myself in excellent company.

But we are delighted to record wonderful advances in prophylaxis in well defined directions and clear explanations.

From all that can be learned as to results, Crede's

method, when exactly followed, seems worthy to be accepted as *par excellence*, the preventive measure—simple certain, harmless.

Other measures: Valude of Paris highly recommends the insufflation of finely-powdered iodoform into the eyes, even before the cord is cut; and Fage, of Amiens, recommends its use by the midwife in preference to the Crede method. Chlorine water, weak corrosive sublimate solution, and permanganate of potash, have each been endorsed as valuable.

*Legal Enactments*—Legal enactments should be passed and strictly enforced on this subject in every State of the Union, on the principle that “an ounce of prevention is worth a pound of cure.”

The disease having commenced, treatment, prompt, faithful, approved as shown by results, must be instituted. Dilution and cleanliness are the general principles to be applied. For this purpose pure warm water (soft or distilled if attainable) should be frequently and freely used. For the same purpose I have used a solution of boracic acid, from ten grains to the ounce to a saturated solution, cleansing the eye as completely as possible after the following manner: With an ordinary dropper, the child's head being held between the knees of the medical attendant, and the hands and body being secured by the nurse, as much of the solution is to be deposited in the cavity between the eye and the nose as the cavity there formed will contain. Then, the lids being separated, the wash will flow in and dilute the secretions, and by opening and closing the lids the washing process may be thus repeated, frequently removing the diluted secretions and the wash by means of forceps and absorbent cotton, until all that will easily mix with the wash has been removed. Then with cotton wrapped on a stick (tooth pick or a match) cleanse the inside of the lids, removing any stringy, tenacious material which may be adhering to them. A repeated washing may now be performed

with advantage. If there is much thickening of the conjunctiva apply directly to the everted lids a solution of corrosive sublimate, 1-1000. The strength may be varied from 1-2000 to 1-500 according to the amount of hypertrophy and the purulency of the secretions. This remedy should be applied by the medical attendant only, and but once or twice a day or once in two days. In the intervals of this latter application the nurse should keep the eyes cleansed, washing them every hour or two hours if the secretion is thick and creamy; and after each washing anoint the edges of the lids with bismuth subnitrate and cosmoline, six or eight grains to the drachm. This latter application will in great measure prevent drying of the discharging matters and adherence of the lids. It may be applied by means of a little cotton on a stick as soon as the child has become quiet or has gone to sleep.

Should the treatment have been begun later, after the cornea has become involved, a solution of sulph. atropia, one grain to the ounce, may be cautiously used by the physician. In my early observations in such a case, in the hands of a specialist, I witnessed a most dangerous, nearly fatal, case of poisoning from the incautious use of this drug in a case of ophthalmia neonatorum.

Without corneal involvement this mydriatic is not needed.

Three cases of ophthalmia neonatorum having come recently under my treatment, and all having terminated in as favorable a manner as could have been desired, I will give but one of them:

Child, male, aged four days; ophthalmia neonatorum of one or two days' standing; left eye only involved; lids swollen, of a deep red color; discharge thick, deep yellow (orange), welling up between the lids when an attempt is made to open them. Even the watery discharge, following the cleansing of the eye, is of a deep yellowish tinge

(icteric). The eye cannot be opened voluntarily at all. I washed the eye twice a day myself with a saturated solution of boracic acid; and followed it with a solution of bichloride of mercury, 1-1000, applied especially to the inside of the upper lid, some of it probably running into the eye; then removed any excess with absorbent cotton. Apply to the edges of the lids, after each washing, an ointment of subnit. of bismuth and cosmo-line. Direct the nurse to cleanse the eye every two or three hours with boracic acid solution (using it warm), and then apply the ointment. Protect the other eye. This was followed up carefully, and on the fourth day the record is as follows: The tumefaction and redness of the lids are much diminished; the discharge is still thick and yellow, but not so free; cornea not cloudy; the other eye not affected. Have applied one drop of a one-grain solution of atropine at two different times.

On the 17th of the same month, being four days later: the lids can now be opened voluntarily when there is not too much secretion so as to cause them to adhere. Have continued the boric acid solution, and the 1-1000 solution of corrosive chloride twice a day. The discharge is losing mostly its purulent character. Continue the acid solution, and apply twice a day the following:

R. Morphiæ sulphatis.....grs. iv.  
 Zinci sulph..... gr. ⅛.  
 Aquæ rosæ..... ℥ ij.

Apply one or two drops into the eye twice a day after washing.

19th: Left eye doing well, secretion thin, scanty and watery. The right eye has been attacked today—nine days after treatment was begun on the left eye, and thirteen days after birth. Commenced treatment on the right eye, as had been done with the left, viz.: Boracic acid wash, followed by corrosive sublimate solution 1-1000, applying subnitrate of bismuth ointment to the edges of the lids.



20th and 21st: Lids of right eye red and swelled. Continued the same application twice a day, and the acid solution every two or three hours, thoroughly applied, followed by the bismuth ointment.

For the left eye, use the acid wash, and a drop or two twice a day of the solution of morphia and zinc.

22d: Both eyes better; discharge thinner and more scanty. Use the acid wash freely, and a drop of the morphia and zinc solution in each eye twice a day. Omit the corrosive sublimate solution—apply the ointment as before directed.

24th: An evening call found the eyes well cleansed; and looking well. Did nothing (as they had been thoroughly washed a short time before,) except to drop into each eye a few drops of the morphine and zinc solution. The corneæ had not been injured.

Gave directions to continue the wash and the drops twice a day, and also the ointment.

On 2nd: Child can open the eyes very well. There is a little mucus discharge yet. Continue the same applications three times a day.

7th: The eyes are not worse, but have not been well cleansed. Directed that more care and more attention be given to washing the eyes. Continue the acid wash and add:

R̄ Zinc. sulph.....gr. ss.  
Hydrastine .....gr. 1.  
Aquæ destillatæ.....℥ j.

A few drops to be instilled into the eye three times a day.

In the three cases no nitrate of silver was used. If there was any part of the course or of the termination of either of the cases that could be criticised it could only be the item of duration. It is quite possible that the time of treatment might have been abbreviated. That is uncertain; the final results could not have been better.

Of the specific nature of these cases the evidence was

sufficient. Should there be ulceration or perforation of the cornea, cleanliness by means of a non-irritating wash will be equally appropriate.

Mydriatics or myotics, as the threatened ulceration may be central or peripheral, will be respectively indicated.

I have nothing new or out of the ordinary recommendations to offer in case of corneal complications. Should chemosis arise to an alarming degree, there is a decided disagreement as to the best method of managing it in order to diminish the dangers to the cornea. I have been taught, have taught others, and have practiced, incisions of the tumefied ocular conjunctiva, and, it seems to me, have seen benefit result therefrom, in relieving, partially at least, the strangulation of the cornea. This procedure has, however, been applied by me in adult cases of purulent ophthalmia rather than in the infantile. DeSchweinitz speaks of scarifications of the conjunctiva in its persistent swelling, while Hinde, of Chicago, says that "scarification of the sero-fibrinoplastic chemosis of the scleral conjunctiva does not relieve exudative pressure on the ocular tissues, while it opens the doorway for secondary infection with pus microbes, and is a dangerous proceeding." These remarks are made by Hinde with reference to purulent ophthalmia from the microbic standpoint.

*Diseases of the Ear.*—In diseases of the ear surgical procedures are being pushed forward, especially in operations within the tympanic cavity; not always, however, with so much success as anticipated. Yet, in properly selected cases, when in the hands of the most skillful and experienced, the results seem to be encouraging, even in some cases brilliant.

As may be seen, progress is being made, and recklessness is being curbed in operations on this delicate organ. A more careful study and selection of cases for operation have recently been made by careful observers, and as a

consequence judicious operations on suitable cases are growing in favor with specialists and with the profession in general, just as has been the case with every important advance in surgery. My own experience has not been sufficiently extended to be of value as a basis of conclusions, but has been, in results, similar to those having larger data, some cases being benefited and some negative; none dangerous, nor the symptoms aggravated. In some chronic suppurating cases, I feel confident, better and quicker results would have been reached had the operation of removing the obstructing membrane and ossicles been permitted.

In regard to the operation for the excision of the drum-head and bonelets for dry catarrh of the middle ear, my position is a very conservative one. To illustrate my reasons the more forcibly I will cite a few cases that have had the operation done. One patient who was in my office today had his drumhead and mallet removed by some surgeon (name not mentioned) several years ago. He came under my treatment last Summer with no hearing in the operated ear, and greatly impaired hearing in the other. The drumhead had reproduced in about eight days. It was again removed, but again regenerated in two weeks, and is still on guard against the admission of sound. The operation was of no benefit to him. The hearing was unimproved and the subjective noises not diminished.

Another case comes to me for treatment about once a year from a distance of over 2,000 miles. The results of the operation on him were deplorable. Like the other, his was a case of dry catarrh of the tympanum. The surgeon (never mind his name) promised improvement in the hearing and noises. Hearing, before the operation several years ago, was two inches for his watch—after the operation, *nil*, and tinnitus increased. When he came to me some time after the calamity, his ear was discharging profusely, and he said that, as he could not hear any-

thing beside the noises, they seemed to be greatly intensified. He has not yet recovered sufficient hearing in the operated ear to be of any use to him, and the other is badly affected. This is a prosperous physician.

Another case operated on by one of my friends had a worse history, including distressing vertigo.

I could refer to several other such cases that have come under my observation; and after having explored the field several years ago, I was deterred by the results of such cases in the hands of my enthusiastic friends, from following in their footsteps. Some of these gentlemen have been honest enough to report even the bad results—others forget them, and greatly to the disadvantage of their brothers.

In chronic suppuration I do not hesitate to remove the mallet and anvil, but do not remove the stirrup. The stirrup should not be disturbed, for its removal will open up a passage for the pus into the labyrinth and cranial cavity.

General anesthesia, by ether, or for a rapid operator, bromide of ethel should be had. With cocaine you have not sufficient control over the patient.

There are cases of sclerotic catarrh in which we may obtain relief from tinnitus, and some improvement in the hearing by this operation; but such cases must be selected with the greatest painstaking care in order not to throw the operation into disrepute. We should benefit by Sir Astley Cooper's experience. It should be determined, first of all, whether the auditory nerve retains its integrity. If so, and the drumhead is so thickened, and the bonelets so stiffened as to constitute an impenetrable barrier to the admission of sound—cut them out. Then the perceptive apparatus will have a chance to perceive.

This is a conservative position, and I believe it to be the only one that is safe for our patients and creditable to ourselves.

Surgical operations on the membrana tympani and ossicles should be considered under two heads, viz.:

1. Operations in so-called chronic catarrh of the middle ear, in which are found thickening, ankylosis and sclerosis of the conductors of sound, with the attendant symptoms, tinnitus, deafness and vertigo, and

2. Operations in chronic purulent otitis media, in which are found synechiæ, polypi, cholesteatomata, necrosis of the ossicles, with imperfect drainage, acute attacks of earache, deafness, vertigo and other nervous phenomena.

All surgical operations on the membrana tympani and ossicles should be performed with the patient under the influence of a general anesthetic, preferably ether. Cocainization of these parts is not adequate to produce sufficient local anesthesia, and the application of cocaine to the ear may inflame the mucous membrane, or be followed by a general toxic effect, or both.

Having, then, administered a general anesthetic, and the ear being illuminated by a six-volt electric lamp, (3 c. p.) held on the operator's forehead, like a forehead mirror, and supplied by a small portable battery, the surgeon may proceed to operate conveniently and safely because the patient is entirely still, as he will not be under any form of local anesthesia.

I. *Operations in Chronic Catarrhal Otitis Media*—Total excision of the membrana tympani and malleus, either with or without the removal of other conductors, I have entirely abandoned in chronic catarrhal deafness, tinnitus and vertigo, as it does little or no good, and may be followed by more or less severe inflammatory reaction.

Impaction and ankylosis of the foot-plate of the stapes, brought about by the retractive force of the tensor tympani acting through the malleus and incus, is the cause of the tinnitus, deafness and vertigo, in chronic catarrhal otitis media. Therefore, the surgeon should seek to liberate this bonelet from its impaction in the oval win-

dow. This is the most safely and efficiently done by removal of the incus alone, for by such an operation the retraction of the tensor tympani and malleus, through the incus upon the stapes is interrupted and the stapes liberated to a greater or less degree. This operation is entirely free from irritation, as the nitrition of the incus is so slight that its exsection from the middle ear is little or no shock to that cavity. If the stapes is not entirely ankylosed it will vibrate again after thus being liberated, and therefore it should not be removed from the oval window. If it be firmly ankylosed in the oval window its foot-plate cannot be removed by simple traction on its head and crura. Violent ablation or gouging out the stapes could of course do no good, and might do harm.

Therefore, in cases of chronic catarrhal deafness, the aurist should rest content with removing *only the incus*, so that in the majority of cases will relieve one or all of the symptoms, tinnitus, deafness and vertigo, without inflammatory reaction.

The following justifiable conclusions may be drawn regarding operations in chronic catarrhal otitis media:

1. That removal of the retractive force of the sound conductors upon the stapes is the efficient means of relieving the tinnitus, deafness and vertigo due to the lesions of chronic catarrh of the middle ear.
2. That the removal of retractive force upon the stapes can be accomplished efficiently and simply by removal of the incus alone, and even by resection of its long process.
3. That the improvement in these cases is due to the liberation of the stapes from the retractive power of the tensor tympani muscle, and the consequent unimpeded action of the stapedius muscle, which, relieved by the antagonism of the tensor tympani, tends all the more to draw the stapes from the oval window, thus aiding the isolation and improved mobility of the bonelet, as well as in removing its undue pressure inward upon the labyrinth fluid.

4. It seems wiser, therefore, in most cases of chronic catarrhal deafness, tinnitus and tympanic vertigo, not to sever the stapedius tendon and remove the stapes, but to be content with the removal of the incus only.

5. Removal of the incus alone, the membrane, malleus and stapes being left *in situ*, gives more space to the drum cavity, increases its resonance, and permits freer access of sound-waves to the stapes, thereby improving the hearing.

6. The progressive improvement in the hearing noted in many instances, must be due to the continuous passive motion exerted upon the ankylosed stapes by sound waves, which are enabled to reach this bonelet more freely after the removal of the incus.

II. *Surgical Operations on the Ear in Chronic Purulent Otitis Media.*—Surgical treatment of chronic purulent otitis media consists in the excision of necrotic tissue from the tympanic cavity. Instillation, insufflation or mopping of medicaments upon the diseased parts in the drum cavity in many cases result in a cure, but there are many instances in which all these forms signally fail after a long and fair trial. In these unyielding cases it will be found that one or more of the auditory bonelets are necrosed, and in some instances that the tympanic wall so near the necrosed bonelets is itself carious. Manifestly in such cases the plain surgical indication is to excise the diseased membrana tympani and bonelets or their remnants in order to remove the septic material from the drum cavity. This improves the drainage of this space, promotes a free application of antiseptics to the tympanum and favors the healing of its muco-periosteal lining. Under such treatment, in most cases, after the operation the diseased mucous membrane heals and carious spots in the tympanic walls are covered over without resort to curetting.

There are some forms of chronic purulent otitis media, in which excision of the remnants of the membrana and

ossicles is especially indicated. These are the so-called attic suppurations, in which necrosis of one or more ossicles is always present, and in which the sole perforation is in the membrana flaccida. Unless the necrotic tissue is excised there can be no permanent cure in such cases.

The operation of excision in chronic suppurative otitis media is like the removal of a polypus in similar conditions. It is the first step in antiseptic treatment of the ear. In many instances, not until the operation has it been possible to thoroughly apply antiseptics to the ear nor to maintain antiseptic conditions in the suppurating space.

The length of time which may elapse between the operation of excision and the cessation of chronic discharge of pus from the drum cavity varies greatly. The quickest permanent cessation in the writer's practice occurred in eight weeks, in an attic suppuration of six years' duration. In another attic case permanent cessation occurred at the end of two and one-half years. In some cases it has not occurred after the lapse of even three years. But after the operation of excision, chronic purulent otitis media has a better chance of being healed than before the operation. It also runs less chance of extending to the brain cavity or causing pyemia than it did before the drum cavity was free from septic matter, and better drained by the removal of carious bonelets and obstructive synechiæ. The patient to be operated upon must be under the influence of a general anesthetic, preferably of ether. Cocainization of the membrane and drum cavity does not produce sufficient anesthesia, and furthermore the risks of cocaine poisoning are very great when this drug is applied to the drum cavity.

After etherization has been accomplished the ear may be thoroughly and safely illuminated by a six-volt electric lamp held on the operator's forehead, and supplied by a small portable battery. Now a thorough exploration of the drum cavity may be made by means of probes



of various curves, for the first time, especially in children, where, before anesthesia, the sensibility of the parts forbade such exploration. All carious ossicles excepting the stapes, must be removed from the drum cavity. The stapes is rarely found to be carious anywhere except in its head. In no case should more than this part of this bone be removed, as the removal of its footplate in case of chronic suppuration opens the way for the entrance of pus into the labyrinth and cranial cavity. All diseased membrane should be excised, especially from the region of the attic, and if polypi are discovered by such excisions, as they often are, they are to be carefully removed. Then the seat of the operation should be gently mopped with a solution of bichloride of mercury, 1 to 6,000, and the ear left open, so as to promote the escape of oozing blood or pus. The ear after this must be treated like any other suppurating ear, by means of antiseptics until the entire cessation of the discharge. The improved drainage and the more direct treatment of the suppurating cavity now give hope of a cure, unattainable without excision of necrotic tissue.

It has been urged against excision of the remnants of the membrane and carious ossicles in chronic purulent otitis media, that it is sometimes followed by facial paralysis. When this unfortunate sequel of the operation occurs it will be found that curetting the cavity of the drum has been done. I have performed eighty-five intratympanic operations of late, but curetting has been applied in no instance, and I have not had a case of facial paralysis to mar the result. I rest content with excision of diseased ossicles and membrana and the removal of polypi. If carious spots are detected on the tympanic walls I know they will soon be covered in by the healing of the ulcerated muco-periosteum, under antiseptic treatment, after the removal of carious and septic matter.

The hearing usually improves as the discharge diminishes. Sometimes it is improved greatly and immediately

by the operation, as the removal of diseased bonelets, synechial bands and infiltrated membrana admits sound directly to the oval window.

The operation of excision in suppurative otitis media furthermore greatly diminishes, and in many cases entirely removes, the risk of cerebral and general infection.

If the tympanic cavity has become practically the outward opening of a sinus, clearing it of septic and obstructive matter at least favors drainage from deeper parts, and ought to be done before resorting to mastoid and cranial operations. If the suppurative disease is limited to the tympanum then the excision of carious tissue practically removes the disease which is threatening to produce brain-abscess, sinus-thrombosis and pyemia, and mastoid and cranial operations are not necessary and never may be. Were excision of necrotic tissue from the drum cavity more frequently and promptly performed, there would be less need of mastoid and deeper cranial operations.

*Conclusions*—It is found that in a large number of cases of long standing inflammation in the tympanic attic with retention of purulent matter, relief is to be had only by means of surgical interference. In cases of otherwise hopeless otorrhoea, removal of all obstruction to the drainage in the middle ear tract is fully recognized, at the present time, as a justifiable procedure in aural surgery as the only means to effect a cure.

The first step in the operation is to separate all membrane adherent to the auditory ring or plate. By means of knives set at different angles the tendon of the tensor tympani muscle, if present, is divided, together with all the fibrous bands between the malleus and incus and the inner tympanic wall. The malleus, or what remains of it, is removed with forceps and the incus, if present, by means of the attic curette. Granulation tissue is removed with small spoon curettes set at various angles for use in any part of the cavity. Great care must be

exercised in using these instruments not to break through the tegmen tympani, fallopian canal or promontory, clearly keeping in mind the anatomy of the parts.

Injury of the chorda tympani nerve, in my experience, produces only very temporary effect on the taste. The hearing power is almost never diminished by the operation, but in many cases improvement follows. No dangerous results from the operation, if properly performed, have been as yet reported. The rapidity of healing depends upon the thoroughness with which the necrotic tissue has been removed.

If the process is confined to the contents of the middle ear cavity, a cure is effected sooner than in cases where the walls or skull itself are involved. This extension makes a thorough removal of all diseased parts dangerous.

In cases of non-suppurative and in post-suppurative diseases the stapes is often fixed.

The indication for operative interference in this class of cases is, therefore, immobility of the stapes. Under these conditions separation of adhesions around the head of the stapes, tenotomy of the stapedius muscle and circumcision of the crura are followed by a gain in hearing. The prognosis depends on the mobility of the base-plate of the stapes, and on the unknown changes in the labyrinth.

Other procedures for overcoming increased tension, not already mentioned, are tenotomy of the tensor tympani muscle, division of the adhesions (synechiotomy), disarticulation of the incudo-stapedial joint and removal of the incus itself.

The efficiency of any measure will depend on the exact location of the cause of the defect in hearing.

The "Remarks on Stapedectomy" published in the Transactions of the Am. Otol. Soc. of 1894 embody nearly all my views on that operation, viz.:

1. In considering the results of a personal experience

of the last two years, I can say that the best results in hearing have been obtained in cases of easy removal of the bone, and that this operation is not advisable in cases of otitis media insidiosa (sclerosis).

2. That cases of chronic aural vertigo have been permanently relieved by liberation of the stapes or by expulsion of the bone itself.

3. That in cases of non-suppurative diseases of the middle ear, as well as the class of cases the result of a chronic suppurative process, surgical mobilization should first be tried before an attempt is made to remove the stapes.

4. That most operations for mobilizing the stapes or freeing the oval window must be looked upon as largely experimental, and that in many cases a fracture of the crura occurs at the time of the attempted expulsion, leaving the base plate.

In most middle ear operations when not contra-indicated the patient is placed in the usual sitting position and ether administered. Ether is given the preference over chloroform or a mixture on account of its stimulating action on the heart. Nitrous oxide gas is found to produce spasmodic movements. Instillations of a 4 or 8 per cent. solution of cocaine produces only slight anesthesia.

Reflected daylight has generally furnished sufficient illumination, but at times the electric light, either worn on the forehead or reflected into the ear by the ordinary head mirror, is indispensable. As a reflected light the Welsbach gives a perfectly pure, white, steady illumination, but has the danger of an exposed light in connection with ether.

Discussion was had by Drs. Minnie, Tyre, Longenecker Graves and others.

Dr. C. M. HOLCOMB delivered the following paper on

ASPERGILLUS NIGER.

It was with some hesitancy that I accepted the invitation to prepare a paper for this section of our State Medical Society, knowing that it is composed of, and participated in, by specialists who rank as the equals of our best men, while my location permits me to be only a general practitioner, yet I am fully appreciative of the honor conferred by this invitation, and the following on aspergillus and my experience with it is at your disposal. While true it is not a common malady, yet sufficiently so to warrant the general practitioner even in being familiar with its symptomatology. It is not the purpose of this paper to go into a detailed account of aspergillus or all the different molds, for the thirty-four different varieties quoted in Burnett's work would mystify an expert mycologist to classify them for practical purposes. As nearly as may be, or need be, we will consider the following classification as sufficiently practical for the purposes of this paper: *Aspergillus niger* and *aspergillus glaucus* or, as Burnett suggests, *aspergillus major* and *aspergillus minor*. The former being the more severe form of the two, and the size of the fruit corresponding to the grade of the inflammation, i. e., the more severe the symptoms the larger the fruit of the mold. The usual site of the fungi is upon the drumhead.

Occurrence may be at any time of the year, and locality seems to have no bearing upon it. According to accepted reports it is rarely found in the young or aged, and seems to have a tendency more toward rural inhabitants though it is true that in a close, dark and damp apartment several may be similarly attacked.

Frequency: Authorities seem to differ considerably, as shown by the following statistics in otological practice: Bazold 0.1 per cent., Hedging 0.5 per cent., Burkuer 1-10 per cent., Burckhardt Meriano 0.3 per cent., Knapp 0.1

per cent., Garber 0.1 per cent., Roosa 0.4 per cent., Shaw-Blake 0.1 per cent., Lucaro 0.09 per cent. In private practice it is considered higher, for the reason that as the fungi thrives on oleaginous material you will usually find private patients using such ear drops previous to the physician being called. *Aspergillus*, as a rule, is preceded by some inflammatory trouble of the auditory canal, such as furuncles, otitis, either suppurative or desquamative or ulcerative. Sometimes following an abrasion or fissure.

**Symptomatology:** The rational symptoms are really not pathognomonic, yet the itching, stinging diminished hearing, some pain, slight watery discharge and a feeling as if cotton were placed within the ear, are the chief subjective symptoms. The physical symptoms, either macroscopic or microscopic, are not very easily mistaken; on inspection you will see the veil-like plaque formed on the drumhead. Again the whole canal and drum may be covered with a substance resembling wet newspaper, with small raised spots of different colors.

**Prognosis** is favorable so far as cure is concerned, but not so good in reference to recurrence, as I have found by experience. Yet recurrence may not occur if rigorous enough steps are taken to entirely remove the cause.

**Duration** is variable, owing to the different conditions, such as general health, previous conditions of ear, habits and surroundings of patient.

**Treatment** will be referred to later in the report of the following case, as I exhausted the armamentarium with which I am familiar.

Mrs. E. C., age 26, brunette, family history good, no previous history of ear trouble until her husband consulted me, October 25, 1892. At that time she was suffering, and continued to suffer, with a series of furuncles of the auditory canal. After a few weeks they ceased forming, and not until February, 1893, was there any further complaint; at that time she complained of itch-

ing, tenderness, some pain and a slight watery discharge. I considered it an eczematous condition, and so treated it, but was not entirely successful. The patient, like many others, was not inclined to be treated as long as she was not suffering much. In the following Fall she again consulted me, and her condition certainly indicated the need of help—face much swollen, also over mastoid process much swollen, jaw stiff, could not open mouth usual distance, severe lancinating pain; temperature 100° F. The auditory canal was well filled with a thick cheesy mass, much like a triturated mass of newspaper when well moistened with saliva, parts of the mass was almost black, like mud, both ears were similar. It was at this time I made the diagnosis of *aspergillus niger*, the microscope confirming the opinion. The treatment pursued at this time was syringing out with warm alkalized water and packing with boric acid; while beneficial, it was not curative. Then a solution of bichloride of mercury, 1 to 1000, was used, 50 per cent. of the solvent being alcohol, and to increase up to point of tolerance, which in this case was about 75 per cent. of alcohol. A small perforation of the drum membrane was present, and in my judgment was responsible for so many recurrences in this particular case. In 1894 four different attacks occurred, and while always using an alkaline solution for syringing out the ears my local applications were frequently changed. Chinoline salicylate and boric acid in the relation of one of the former to eight of the latter, as recommended by Burnett, was tried with the same results as other drugs, viz.: An improvement, seemingly a cure. Yet no cure resulted. Silver nitrate, 10 to 20 grains to the ounce, was more prompt in clearing out the canal and healing the excoriations than any drug used. Other drugs used were potassi permangan, 2 per cent.; salicylic acid, lead acetate, zinci ox. In December, 1894, the last attack occurred, and also the most severe; it was

accompanied by a temperature of 102° F., part of the time, extreme suffering of the ears and whole head. The swelling was intense about the ears, neck and face—was obliged to use morphine at times to control the suffering. Three different pockets of pus formed and were opened. One at lower portion of mastoid, one at superior portion, just back of the helix, and the third was situated just in front of the helix over zygomatic process. Unfortunately this pus was not examined microscopically. The abscesses soon healed, and in a few days the inflammatory symptoms subsided, so it was possible to examine closely; there was a large perforation of the drum membrane. On cleansing the canal I used 3 ii of the yellow oxide of mercury to 3 i of liquid alboline with the result of a cure. The membrani tympanii is now intact; hearing is not diminished, and no further evidence of the mold exists.

#### DISCUSSION.

Dr. R. S. MAGEE: In the treatment of aspergillus great care should be taken to thoroughly disinfect all cotton carriers or speculi that are used in such patients, as the contagion may easily be carried from one ear to the other, and in a short time all of your ear patients will have aspergillus. As to medication, absolute alcohol or slightly diluted gives the best satisfaction in my hands. Water in the ear should be avoided in the treatment of these cases almost entirely, as water is food for them. The nearer dry you can keep the ear, the easier will they be gotten rid of. Mercurial ointment, ten grains to the ounce of vaseline, may also be applied if the alcohol is used.

Dr. LOGAN: I corroborate the statement of Dr. Magee that the use of water should be absolutely prohibited in these cases in the ear. Hydrargyrum ox. flava should be used; it is the treatment par excellence in these cases; also the absolute alcohol.



Dr. D. F. LONGENECKER, of Emporia, Kas., read the following paper on

CHRONIC PURULENT INFLAMMATION OF THE MIDDLE EAR.

In Burnett's book on "Diseases of the Ear," edition of 1877, under the heading of "Chronic Purulent Inflammation of the Middle Ear," is found the following strong statement: "Unhesitatingly it can be said that unless the otorrhœa is cured, the disease will surely extend to the brain. If it does not reach the brain, it will be because the patient will die of pyemia and metastatic abscess, before the central organ in the skull is reached."

The language just quoted was used almost twenty years ago and came to us as the result of careful observation and investigation of tympanic disease by one of the foremost otologists of our country. The dire consequences, as portrayed by his pen, were surely strong enough to awaken a just estimate of the importance of this affection, and to stimulate investigation for more light in its management. Yet, by a glance backward over that period, we find little or no change in the treatment of this disease for some years, and must look to the introduction of antiseptics as the earliest exhibition of anything like specific medication. In the wake of antiseptics in ear diseases, as in general surgery, came the full conception of the importance of asepsis and cleanliness, which called for more thorough care in the examination of each particular case, and more thorough application of cleansing and antiseptic agents.

But it remained for surgery, in this age of medicine, which may fittingly be called the surgical age, to come forward and show that something like a radical cure could be accomplished through its agency that could not be accomplished by any other means. Surgery has done more; in addition to contributing valuable aid in the cure of otorrhœas, it has called out the conservative ranks of

the medical profession and challenged them to stop, if they can, the serious complications ere it becomes necessary to resort to the difficult and exceedingly formidable operation of making into one cavity the external canal, middle ear and antrum, known as the Stacke operation.

The advancement of surgery into the field of middle ear diseases has given new interest and importance to the subject, and there is probably more investigation being made along this line at the present time than at any previous period, and we confidently look to the future for something infinitely better than the past has yet given us.

The pathologico-anatomical changes in this disease affect first the mucous membrane of the middle ear, from whence they may extend to the bony walls and communicating cavities round about, if not checked by a favorable tendency of the disease or by treatment. The earliest manifestation is a loss of the ciliated character of the epithelium, followed by increase in bulk of the mucous membrane, due, principally, to excessive infiltration of round cells, and enlargement and new formation of vessels in the subepithelial layer. The membrane is thus increased to several times its original thickness, and through excessive action at certain points presents an uneven surface, with small irregular or fungoid excrescences.

Again, the epithelium of the middle ear may take on an epidermal character, from extension of epidermis through opening in the drum membrane, which is always an essential feature of this disease. As later changes we may have granulations, polypoid proliferations or cholesteatomatous formations, which, if let alone, may finally lead to ulceration and necrosis of bone.

With the etiology and symptoms you are all familiar, so suffice it to say that causes are about the same as those productive of acute purulent inflammation of the middle ear, and when not following the acute form it usually oc-

curs in the course of diphtheria, scarlet fever or other exanthemata. A peculiarity of attacks coincident or caused by the diseases mentioned, is the absence of acute phenomena; the trouble seems to be chronic from the start, and often rapidly leads to ulceration and necrosis of some portion of the temporal bone.

Just why this is the case has not been satisfactorily explained. The micro-organisms of the acute fever are doubtless responsible for this difference; the extreme virulence of the one being associated with extreme virulence of the other. These germs abound in the throat in great numbers, in these diseases, and find their way through the eustachian tubes to the middle ear, where the protected location and limited space favors their active proliferation and hasty advancement to underlying tissues and structures.

The diagnosis of purulent inflammation of the middle ear is easy, in fact the discharge alone almost establishes its identity, but a correct knowledge of the condition of the parts, and the pathological changes, without which a prognosis is uncertain and treatment often without avail, is one of the most difficult things that the otologist has to meet.

It requires patience, perseverance, and a dexterity with instruments that comes from long practice, together with sufficient knowledge to properly weigh every little detail, and to have all morbid phenomena represented in the resultant conclusions.

The treatment of chronic suppurative inflammation of the middle ear is influenced by the causation, local changes in the ear, and the general health of the patient.

In acute fevers it must be prompt and active, with early and adequate drainage. Where we have nothing more than a simple infiltration and tumefaction of the mucous membrane associated with the suppuration, it is essentially different from that used in those cases in which

granulations or cholesteatomatous formations are present. The rules of action, as summed up by Burnett, are two, each fundamental, cleanliness and perseverance. Without cleanliness we can do nothing, so thorough syringing must be done and the muco-purulent secretion entirely removed, not only once a day, but as many times a day as found necessary to keep the ear perfectly clean. So important, to my mind, is the cleansing, that I believe many cases would recover with that alone, if absolute cleanliness of the tympanum could be maintained.

But in this the surgeon has many obstacles to overcome: To be sure of the syringing being done properly, it should be done by the surgeon himself, or a trained substitute, which unfortunately is hardly possible outside of hospitals; and in the second place it is not an easy matter to remove all discharge or caseous substance from such an irregular cavity as the tympanum, with extra sulci pockets and sinuses due to swelling and infiltration of the mucous membrane. It is hard enough, sometimes, to remove sticky secretions or desquamative matter from the external meatus, to say nothing of syringing such matter through a small opening in the drum membrane. As adjuncts to the syringing, the blowing of air through the eustachian tube by the Politzer method or eustachian catheter, and the rarefaction of air, or, as it may be called, aspiration of tympanum, through external meatus, may conjointly succeed in further freeing the tympanum of muco-purulent discharge.

The cleansing agents may consist of sterilized water, or if there is much odor to the discharge, carbolic acid may be added (2 to 3 per cent.), or resorcin (2 to 3 per cent.), or perhaps, in obstinate sepsis, bichloride of mercury (1 to 10,000). Politzer speaks very highly of oleum terebinth (4 to 5 drops to one-fifth litre of water) for syringing; he has observed blenorrhœas cease almost immediately on its use alone, after obstinately resisting many other agents. Of the local treatment used for the

cure of these cases, Politzer says: "No decided opinion can at present be given concerning the mode of operation of medicinal agents. We know only this much, that by many drugs, especially by alcohol and pulverized substances, water is withdrawn from the diseased tissues; that other remedies, by their caustic operation, produce a strong reaction and a rapid change in the circulation and nutrition of the mucous membrane; and that further, by the chemical and mechanical irritation which many medicinal agents produce, the degeneration and absorption of the round cells infiltrated in the tissue take place, and that the antiseptics, owing to their anti-bacterial effects and their property of preventing sepsis and decomposition have a beneficial effect upon the course of suppurative processes in the middle ear."

As this disease is produced by micro-organisms, and carries in the purulent secretion swarms of bacteria due to decomposition changes, we would naturally, at this age of germ warfare, place antiseptics at the head of the list of remedial agents. As the list of agents used for this purpose is long and steadily growing in length, I shall only mention some of the more common.

First in universal use, and likewise, probably, in efficiency, is finely powdered boracic acid, blown into the ear with a powder blower, quill or hollow tube, yet on extended trial it will frequently be found to fail, and will not hold the faith that its use builds up in acute suppurative inflammation of the middle ear.

Carbolic acid is another useful remedy, most efficient in a weak alcoholic solution (1 part to 15 parts each of alcohol and water). Bichloride of mercury in water or weak alcoholic solution of 1 to 2,500 often succeeds where other remedies fail, and so is very worthy of trial.

Iodoform has its adherents, but is objectionable on account of its odor. Iodol lacks the odor of iodoform, and also lacks, in the opinion of most otologists, its efficiency as an antiseptic and cicatrisant. Aristol, a preparation

introduced in the last few years as a substitute for iodoform, is growing in favor. It is used by a good many otologists, among them Dr. Bishop, of Chicago, with considerable confidence as a cicatrisant. Peroxide of hydrogen is a remedy that in many cases cannot be esteemed too highly. It assists as a cleansing agent also, in addition to its germicidal properties.

Among the latest additions to the list of antiseptics I may mention another agent that, notwithstanding its recent introduction, has had a very general and extended trial on the strength of its high recommendation as a germicide. I refer to pyoktanin; it is needless for me to say that its reputation has not been fully sustained in this line of work.

If either powders or liquids are used they should be used often enough to keep the ear as aseptic as possible under the circumstances, and diminished in frequency as the discharge diminishes. Over-medication as repair is taking place is as much to be guarded against as too little medication. After a trial of one remedy for two weeks without effect it should be discontinued and another used in its place.

A remedy used very much by the Germans, and also by the doctors of Chicago, the coming Germany of America, when antiseptics as mentioned fail, is alcohol. It is used either pure or in various dilutions, as its effects may indicate, and is introduced into the ear twice a day, warm, where it is allowed to remain for ten to fifteen minutes. If its use is attended with a severe burning, it should be diluted with water to a point of easy toleration, and then gradually increased in strength after some days as the patient becomes able to bear it.

The old plan of treatment of otorrhea by astringents, formerly so much relied upon, has been almost entirely dropped since the introduction of antiseptics.

The agents from this class of drugs found most serviceable, and consequently most used, are zinc, lead, cop-

per and alum, the three first in solution, and the fourth, alum, either in solution or powder. Some years back powdered alum, blown into the ear through a tube, was held in very high esteem.

The caustic plan of treatment, by nitrate of silver, has had its friends from its earliest introduction to the present day. Its early use was in solutions entirely too weak for efficiency. To Prof. Schwartz, the profession is indebted for demonstrating its more certain action in checking discharge when used in greater strength. With less than 15 grs. to the ounce, he seldom found any appreciable effect, and noticed that the surest results followed the use of 40 to 60, or even 90 grs. to the ounce.

Nitrate of silver is not applicable in all cases; a small opening in the drum membrane, granulations, polypii, desquamative processes or caries of the temporal bone contraindicate its use.

A second application is not made until after the removal of the eschar of the first, be that in eight hours or two or three days.

Dr. Tiffany, of Kansas city, has been testing, in these cases, the internal administration of sulphide of calcium, and reports extremely gratifying results. The dose administered, I believe, ranged from one-sixth to one-third of a grain three times a day.

The drugs just mentioned comprise the principal remedies relied upon by otologists of today, being supplemented, however, by internal medication, if demanded by any specific condition of the system. Should these remedies, faithfully applied, successively fail, as they sometimes will, there is yet one procedure, advocated by some and condemned by others, that is worthy of trial before abandoning the sufferer to his fate, or subjecting him to surgical interference, and that is intratympanic injections, especially by the eustachian tube. Politzer's method is to inject warm water, or boracic acid water, through the eustachian catheter, and where difficulty is experi-

enced in reaching the cavity of the tympanum on account of inspissated secretion or proliferations of the mucous membrane, thus turning injection fluid back into nasopharynx, he uses Weber Leil's elastic tympanic catheter. This instrument consists of a small flexible tube, funnel shaped at one extremity for the reception of the nozzle of a syringe. It is introduced through a rather large eustachian catheter, and pushed on up to tympanum.

Where it is not possible to wash out tympanum through the tube, he accomplishes the same purpose through the external meatus by means of a balloon-shaped rubber syringe, fitted with an olive-shaped tip that completely closes the external meatus.

It follows naturally that in the use of either of these procedures there must be a good large opening in the drum membrane and a pervious condition of the eustachian tube.

A simple infiltration and tumefaction of the mucous membrane of the middle ear, or moderate desquamative formation, will generally yield to a thorough application of some one of the foregoing remedies or procedures, but if the trouble is complicated by extensive granulations or collections of cholesteatoma in the lower part of tympanum, or in Prussak's space, something more may be demanded. For granulations, cauterization gives the best results. Iron in the form of the tincture of the chloride, applied by means of a cotton-tipped probe, is the easiest handled and likewise the most serviceable of the liquids.

Yet alcohol will frequently accomplish the same purpose through a shrinking of the growths, where not too large, or where they are partially destroyed by other agents. The galvano cautery acts very nicely in these cases, and when applied after thorough cocaineization is almost painless, and what pain there is ceases immediately after the operation. It has the advantage of destroying these proliferations more thoroughly than by



any other caustic, and causes a further shrinking of the growth beyond the point touched by the caustic. Another very good method of removing them is by means of the sharp spoon or curette.

In removing them with this instrument carious bone is sometimes found in the middle of a cluster, which may be removed also or greatly benefited by the scraping.

The treatment of cholesteatomatous formations in the tympanum is determined somewhat by their location, but in a general way is accomplished by syringing, force being applied where their location demands it, and their removal further facilitated by enlarging already existing openings where they are found to be too small. If forcible syringing will not succeed, where the opening in the drum membrane is large, a small rubber tube, attached to the nozzle of the syringe and introduced into the deeper part of the meatus, to the opening in the membrane may thus bring the force of the stream into more direct contact with the mass, and thereby succeed in dislodging it.

Failing in this, recourse may be had to a Hartman canula or Politzer elastic canula, which is introduced through the opening in the drum membrane into the tympanic cavity, and the injection thus made to play directly upon the formation.

This brings me to the end of drug remedies and mild measures hitherto used in middle ear suppurations that I expect to consider in this paper, and in closing I shall only briefly mention, without description, the surgical procedures that are rapidly becoming very important factors in the cure of obstinate and persistent middle ear suppurations.

First, *Removal of Membrana Tympana and the Ossicles*—The indications for this operation fill several pages in Politzer's late work on the ear, but a few of the more important ones may be briefly stated as follows:

1. Obstinate middle ear suppuration which withstands

all local treatment, accompanied by caries of the hammer.

2. Retarded flow of pus from upper tympanic spaces in spite of treatment, and at times accompanied by painful swellings of the upper wall of the meatus, with headache and dizziness.

3. Cholesteatoma in the upper tympanic spaces, which is the cause of frequent relapses of middle ear suppuration.

4. Chronic suppuration in the external attic with perforation of the membrana Shrapnelli.

5. With granulations in the upper tympanic space which repeatedly grows through the perforations in the membrana tympani if they are accompanied by retention of pus, headache and facial paresis, and in spite of the repeated removal and cauterization, return anew.

The second operation, to which I referred in the commencement of this paper, named after its originator, Stacke, and which consists in cutting away the posterior superior wall of the meatus and the dividing wall between the antrum and the tympanic cavity, belongs more properly to complications arising from middle ear suppurations, yet there are conditions confined to the middle ear proper that cannot be reached in our present practice by anything short of some such operation. It may be a necessary sequence to the operation for removal of the ossicles, where the incus, from an unsuccessful attempt at its removal, has been dislocated in the direction of the antrum, beyond reach from the meatus, and where, as a foreign body, it perpetuates the discharge.

Furthermore, by it the attic may be more thoroughly and safely cleared of granulations, cholesteatoma and necrosis, and in fact the whole middle ear more thoroughly cleared of morbid product, tissue or carious bone, and what is probably of equal importance, the after treatment may be made more aseptic by destroying the communicating cavities, nooks and corners for lodgement of septic matter. The smooth walls of the different auriel

cavities after this operation and the openness and easy reach of the seat of disease, together with the improvement of hearing that sometimes follows, and the further fact that it brings about a radical cure, are strong considerations for making of it the ideal operation.

Its possibilities are not equaled by any other operation at present known, yet it will hardly come into popular favor until relieved of some of its dangers.

The lateral sinus and the facial nerve are the Scylla and Charybdis between which the operator must pass, and after adding to these dangers the further danger of opening the cranial cavity or the semi-circular canals, the operation will appear sufficiently hazardous to deter all operators who are not sure of their anatomy, or have not had the necessary amount of practice on the cadaver, and especially will they be thus influenced when it is known that a goodly number of cases of facial paralysis are found among the cases operated upon by those most expert in aural surgery.

#### DISCUSSION.

Dr. MINNEY: Constitutional treatment in these cases is just as essential as local treatment. The doctor has given thoroughly the treatment used in this line of cases.

Dr. LOGAN: If the patient is generally debilitated, the debility may affect the ear. Good drainage must be established and maintained. Adenoid vegetations in the posterior nares must be removed in the treatment of these cases. Dr. Gill has found in the treatment of these cases that alcohol, together with the oil of peppermint, one or two drops to the ounce, gives admirable results.

Dr. LONGNECKER: This paper is intended to recommend only local and not constitutional treatment. The Germans are great believers in cholesteatoma in the middle ear, and that can only be gotten rid of by the use of intra-tympanic injections.

Dr. W. E. McVey, Topeka, delivered the following paper on

#### THE ETHMOID IN NASAL DISEASE.

Head pains, both frontal and occipital, deep-seated eye pains with photophobia and lachrymation; general nervous disturbances with asthmatic symptoms such as we find in hay fever and frequently mental disturbances, incapacity for business, sleeplessness, loss of memory, etc., are conditions which we frequently find accompanying certain forms of nasal disease. Such grave disturbances can hardly be attributed to such conditions as hypertrophic rhinitis deflections of the septum or pressure by spurs or other deformities, yet it is only of recent date that any better reasons have been advanced for the occurrence of these disturbances.

Spurs most frequently occur in the lower meatus, and when they cause a pressure it is by impinging upon the lower turbinate. Although this is a very common condition, we do not find it frequently accompanied by these grave disturbances we have mentioned.

Marked deflections of the septum, perhaps entirely occluding one nasal passage, frequently exist for years without causing either asthmatic symptoms or headache. I think it also very commonly observed that these disturbances do appear where there is apparently only an acute rhinitis with none of these deformities.

From our knowledge of the anatomical structure of the nose we would hardly suppose that either an acute or chronic inflammation of the nasal mucous membrane alone would be sufficient cause. There is a condition, an enlargement of the middle turbinate, which is of almost constant occurrence in these cases, and at one time I was led to believe the middle turbinate was an important factor in producing these symptoms by pressure upon the upper and more sensitive portion of the septum. Further investigations, however, proved conclusively to me that if

the middle turbinate is the cause it is not by pressure upon the septum, for I found these symptoms in a very exaggerated form in cases where though the turbinate was enlarged there was sufficient space between it and the septum to preclude the possibility of pressure.

As is well known, the middle turbinate is a part of the ethmoid bone, and by examining this specimen you will see that in some cases at least the ethmoid cells are continued into the turbinate bone. These cells are lined with mucous membrane, which is continuous with the lining membrane of the nose, and the nasal opening is situated in the middle meatus, over which hangs the middle turbinate in such position that by enlargement or swelling this opening may be occluded.

All the cavities accessory to the nose being lined by a continuation of the mucous membrane of the nasal cavities proper, it is not unlikely that these cavities are frequently involved in catarrhal inflammations of the nose.

Thus we may easily account for the usual headache, dullness and sense of fullness accompanying acute rhinitis. If the nasal opening of these sinuses remain patulous, such inflammation usually subsides with the nasal trouble. If, however, one of these openings be closed, as is likely to occur with that of the ethmoid cells when the middle turbinate is hypertrophied, free drainage is prevented and we have a subacute or chronic inflammation and retention. This retention causing pressure, produces pain in the head and many of the symptoms we have mentioned. When the cells extend into the middle turbinate bone there is rapid enlargement of this body.

To illustrate, I will report to you three cases: The first case was a man 50 years of age whom I had been treating for a chronic pharyngitis. At the commencement of the treatment there were no evidences of nasal trouble. A few months after I first saw him he complained of constant frontal headache and intraocular pressure. I found now a hypertrophic appearance of the middle turbinate,

and removed the hypertrophied tissue with a wire snare, relieving any pressure there was upon the septum. The symptoms were not relieved, and in two weeks there was a marked increase of the enlargement, which now had a hard bony resistance. The headache had grown much worse, and he complained now of severe pain in the back of the head and neck, sleeplessness and almost complete loss of memory. The enlarged turbinate bone was crushed with the wire snare and removed in pieces, which were very thin and hard. There was a profuse discharge of fluid or mucus from the cavity. Relief was immediate and permanent.

The second case was a man 45 years of age, who stopped here on his way from Colorado, where he had been for the relief of asthma. He had had repeated attacks of asthma for several years. I found a very much enlarged middle turbinate with hard bony resistance, and which had produced a marked deviation of the septum. I removed a part of the growth with a nasal saw and found it to be hollow. I directed him to use frequent douches of hot water, and when I saw him about four weeks later, though the septum had receded sufficiently to produce some pressure, he was free from his asthmatic symptoms.

The third case was a lady whom I had under treatment for hay fever. The nose had been repeatedly cauterized, and though there was no marked intranasal pressure, the symptoms grew rapidly worse. Pain, frontal and occipital, was intense. There were rigors and elevation of temperature. Patient complained greatly of pain in the top of the head and back of the neck, and at times the head was drawn back. Cocaine in the nose gave no relief, and opiates only partially controlled the pain. A careful study of this case led me to believe that I had an ethmoid trouble to deal with, though there was no protrusion of the eyes and no purulent discharge into the nose, as described in most text-books. After thoroughly douching the nose with hot water, and cocainizing, I

sawed through the body of the middle turbinate and opened into a cavity from which was discharged some very dark blood clots and a quantity of fluid. From the appearance of the clots and the fact that the nose had been thoroughly washed out before the operation, I can account for them in no other way than that there had been some hemorrhage into the ethmoid cells, and the clots retained there. After the operation the symptoms were greatly relieved and only reappeared when the opening became closed. The wound was frequently douched with hot water and occasionally opened up. There was steady improvement, and when I last saw the case there had been no return of symptoms.

A few months after my experience with this case I noticed an article by Dr. Bosworth, in the *Medical Record* of October 13, 1894, from which I quote the following:

"I regard ethmoidal disease as not only by far the most frequent of all diseases of the accessory cavities, but as of very much more frequent occurrence than we ordinarily have been taught to believe, as will be inferred by the statement that in the past five years ninety-eight such cases have come under observation in my private practice. In the chapter on acute rhinitis, in all of our text-books on throat diseases, Bosworth among others, there is described a disease characterized often by nasal stenosis, frontal headache, intra-orbital pressure, asthenopia, watery discharge and violent sneezing, which I very frankly confess I have rarely seen where I was enabled to detect a rational explanation of the symptoms in the morbid condition of the nasal mucous membrane alone, as seen by ocular inspection. I contented myself with the old teaching that these symptoms were to an extent reflex in character. I do not hesitate to say that I believe a very large proportion of the cases of so-called acute rhinitis are really instances of acute ethmoiditis, and that such inflammation as may exist in the

nasal mucous membrane is really secondary to the graver and more distressing conditions of the lining membrane of the ethmoidal cells.

"An acute inflammatory process of the mucous membrane lining these cells very soon either results in resolution or a chronic morbid process. Owing to the peculiar anatomical character of this membrane, a chronic inflammation tends to develop a soft jelly-like thickening of the tissue, which takes on what we may describe as a myxomatous character. Now, this may persist for a somewhat prolonged period of time, giving rise to distension of the cells, with its train of symptoms already alluded to, which are watery or muco-purulent discharges, violent attacks of sneezing, headache, intra-orbital pressure, aprosexia, etc., and if the constitutional habit be neurotic, hay fever and asthma."

I am firmly convinced, from the similarity of symptoms in these cases, which were evidently ethmoidal disease, to the ordinary symptoms of hay fever, that in these pathological conditions of the ethmoid cells we will be able to locate the causative factor of those conditions to which we have given the name of hay fever, or as Bosworth has termed it, vaso-motor rhinitis. In many cases the occlusion of the ostium ethmoidalis is caused by the hypertrophied tissue of the turbinate and removal of this tissue frees the opening and promotes drainage. In other cases a removal of the middle turbinate entirely uncaps the cells and thus drainage is secured, but in each of the cases I have reported to you the middle turbinate was simply an extension of the cells, and opening into it answered the same purpose as removal.

#### DISCUSSION.

Dr. LOGAN: The importance given by the doctor to the ethmoid in nasal diseases meets my hearty approval. There is no question but that the inflammation of the interior ethmoid cells, possibly involving the frontal sinus,



as productive of atrophic tinnitus, and atrophy of the middle turbinate, does not originate in itself but comes from another source. The middle turbinate is well enriched with blood; but it is poorly supplied with muciferous glands. The deposit found on it come from somewhere else. This deposit is a purulent secretion dried out by the passage of air over it. This cakey deposit covers over the middle turbinate, covering up its cells and interfering with its functions. I have in many cases relieved the middle turbinate by operating on the interior ethmoidal cells.

Dr. McVEY: I firmly believe that the reflex nasal diseases which characterize hay fever, come from this source. The enlargement of the middle turbinate which occurs in these cases, producing pressure on the septum, comes from trouble in the ethmoidal cells. Headaches, which we believe to be due to pressure on the septum, is really due to ethmoidal pressure or to trouble in the frontal sinus.

Dr. R. S. MAGEE read the following paper on

#### TINNITUS AURIUM.

Probably no other one symptom is so often present in middle ear troubles as tinnitus aurium or ringing ears.

Neither is any one of the symptoms more unpleasant and annoying than the tinnitus unless it be the sharp lancinating pain which usually accompanies and is characteristic of acute suppurative otitis media.

The tinnitus usually precedes the attack and is the last evidence of the trouble to disappear, often continuing for several weeks and occasionally becoming permanent.

The amount of noise, sometimes, is considerable, and becomes so intense at times that you are asked by these patients to place your ear alongside of theirs that, partially at least, you may enter into the joys or the distracting noises of which they are the possessor.

The character of the sounds heard vary considerably.

The peculiar description which patients give of these sounds is usually in accord with their occupation or surroundings. They liken it to sounds with which they daily come in contact.

If the patient be a locomotive engineer, he hears the ringing of bells and whistling trains approaching; if the victim be a school teacher, it will resemble whispering children and unruly boys filing niches in their seats. If a farmer, the crickets and chinch bugs and locusts in continual warfare. Wilde says that persons from the country or rural districts draw their similitudes from the objects and noises with which they have been surrounded as the falling and rushing of water, the singing of birds, the buzzing of bees and the waving or rustling of trees, while on the other hand, persons living in town or in the vicinity of machinery or manufactories say that they hear the rolling of carriages, the hammerings and the various noises caused by steam engines.

The physician, unless he has experienced the sensation himself, can know nothing of it except from the narrations of his patients.

There is a crackling and clicking sound in the ear which is audible to the physician as well as the patient, which is probably due to the presence of liquid in the middle ear, or to some action of the tensor tympani stapedius or the muscles of the eustachian tube, which must not be confounded with the real tinnitus, which is never audible to an observer.

There is also a venous murmur transmitted from the jugular vein, which runs just under the floor of the tympanum and must not be taken for tinnitus.

Also the pulsation of the internal carotid, as it winds through the apex of the petrous portion of the temporal bone. Neither of these are apt to result in any considerable impairment of hearing, but are usually dependent upon anæmia or aneurism. The murmurs or pulsations

induced by any one of these are rythmical and synchronous with the pulse at the wrist, and in this way can be separated from noises produced by other causes. The tinnitus is usually bilateral, although both ears are seldom involved to the same degree. The impairment in hearing consequent upon the tinnitus is usually intermittent in the earlier stages.

These patients are the ones, at least most of them, who hear better in a noise. Changes in the position of the body affect the character and degree of the noises. Quite frequently they are only noticed when the patient is lying down.

Tinnitus aurium is an almost constant attendant of chronic non-suppurative disease of the middle ear. It occurs also in impacted cerumen and in acute and sub-acute catarrh of the middle ear. Roosa claims, as the most reasonable theory of tinnitus, that it is due to pressure upon the vessels of the tympanum and labyrinth. Over-filled arteries and arterioles cause unequal and undue pressure on the perilymph and endolymph and excite a tinnitus. In this way may be explained the tinnitus arising from quinine and salicylic acid. Decrease in the blood pressure, as found in anæmia, and patients who have suffered from great hemorrhages also giving rise to tinnitus, would conflict with the pressure theory. Mr. Field of London, in his observations on this subject, is inclined to the opinion that the tinnitus is due to a disturbance of the pressure equilibrium within the labyrinth. That unequal pressure causes an abnormal vascular tension, or lack of tension and that anæmia or hyperæmia are powerful agents in the modification of pressure equilibrium.

Dr. Theobald cites as his opinion that the existence of vibrations in the walls of the blood vessels of the labyrinth by the friction attending the circulation of the blood gives rise to the tinnitus.

Patients suffering from tinnitus lose their acuteness of

hearing. This, together with the disagreeableness and the continuousness of the noises brings these patients to the physician.

The impairment of hearing is due not to any changes which have taken place in the drumhead particularly, but to the confusion which is present, thereby puzzling the patient in his effort to hear distinctly or to make sure of sounds which he hears, whether they are in the locality of his own tympanum or within easy reach in the outside world round about him. If the tinnitus be undisturbed, receiving no medical attention, it sometimes disappears; more often, however, it increases in intensity, and becomes very annoying. As the ringing increases, so does the impairment in hearing advance.

Each attack of "a common ordinary cold," acute coryza or otherwise, heightens the ringing and the patient is driven to desperation. He consults his physician and wants something done. In a day or two, however, he is better of his cold, and with this there is a partial subsidence in the fury of the tinnitus.

But if his power of hearing was carefully and accurately measured, he would discover that with each attack he had lost a fraction of the acuteness in hearing. "The last state of that man is worse than the first." There can be no doubt that this is one of the most distressing symptoms of aural disease that can befall a patient and often is the provoking cause of suicide. St. John Roosa and Chas. S. Bull both relate cases in which the patients suddenly ended their lives when they found that no relief could be obtained from the malady. Troltsch speaks of patients who never suffered any pain in their ears—only the tinnitus—having a confusion of the intellect, unable to keep up a connected line of thought, and at times suffering a temporary derangement of their mental powers. Some time ago a lady called on me, complaining of noises within her head, being prevailed upon by a friend to do so before undergoing an operation for a supposed cerebral

tumor, which she imagined was responsible for her trouble. I found it to be tinnitus aurium. At times it was particularly annoying—increased on lying down—so much so that it seriously interfered with her rest. She seriously expressed herself as not wanting to live if no relief could be obtained.

Casse Cohen has demonstrated that the anastomosis between the vessels of the middle ear and the labyrinth takes place at the fenestra rotunda. Buck has demonstrated a similar anastomosis at the oval window.

We then can easily see, if this be true, how any increased vascularity within the tympanum may affect the circulation in the labyrinth, both by mechanical pressure and by a change in the rapidity of the flow of the blood current.

Examination of the throat in many of these cases show it to be perfectly healthy, the trouble being confined largely to the eustachian tube. The drum membrane may also show but little deviation from the normal, either in color or in depression; nothing save possibly a slight line of redness along the malleus handle or at the superior border of the drumhead. The lustre may be somewhat slightly diminished and its texture none or slightly thickened. The impairment in hearing disappears generally to an astonishing extent upon inflation; also the roaring oftentimes temporarily subsides to reappear upon deglutition.

*Prognosis.*—Where the aural lesion is associated with some affection of the upper air passages, hypertrophic turbinates, adenomata of the vault of the pharynx, enlarged tonsils, etc., etc., we can usually promise, by restoring these parts to their normal state, to relieve the patient of the sudden fluctuations in hearing and tinnitus. At the same time the progress of the disease may be checked, but any marked improvement cannot be promised, particularly if the patient be more than thirty years of age.

In young subjects the improvement is usually more marked, although the extent of improvement promised must be cautiously guarded.

The station in life, exposure to inclement weather, physical hardships, sudden changes of heat and cold are all potent factors, influencing the progress of the disease.

*Treatment.*—The beneficial effect of inflation upon the calibre of the eustachian tube depends upon the fact that when the normal calibre is restored for a short time by the passage of a current of air, which temporarily relieves the venous engorgement, the tube gradually regains its normal potency. The air drives the blood out of the distended venous channels and permits them to resume their normal tone. If this does not accomplish the purpose, dilatation of the canal by means of bougies or catheters will have to be resorted to. Before undertaking this I would suggest the use of chloroform vapor in the Politzerization. After the tube is opened the medication of the tympanic cavity by means of vapors can then be accomplished. These may consist of tr. benzoin, eucalyptus, menthol, alcohol, iodine, singly or in combination, or any other volatile drug which possesses stimulating properties.

The stimulation should not cause any pain, but the patient should only be conscious of a moderate stinging sensation.

The vapor which I find giving the best results is equal parts of menthol and camphor with alboline, to be used daily.

When the roaring is aggravated the internal administration of bromides or cannabis indicæ give fair results.

*Surgical Procedure.*—Viz.: Sexton's operation has not demonstrated any positive benefit in doing away with the tinnitus.

The following paper by Dr. E. E. HAMILTON was read by title:

THE QUARTER DIOPTRY CYLINDER—SOME TESTIMONY FOR.

That the complexity of symptoms known under the general term asthenopia has its cause, in a large majority of cases, in ciliary muscle strains, all agree. No fact in ophthalmology is more firmly established.

Errors of refraction, both axial and those due to irregularities of corneal or lenticular curvature (unequal refraction in different meridians of the eye), impose additional work on the ciliary muscle. Under such conditions, in many instances, the overtaxed muscle gives way under its almost constant tension and causes distressing symptoms located in and around the eyes.

Perfect health may, and often does, compensate for these errors. Most frequently the patient's discomfort dates from an over-use of the eyes, or some impaired state of the health.

Often, too, the excessive muscular effort in accommodation disturbs the relation between it and convergence. Here a loss of muscular equilibrium may add another factor to the patient's unpleasant sensation, in extra ocular muscle strain. However much we may differ as to the part that aberrations of the extrinsic muscles have to do in the production of eye strain, it is a fact patent to us all that the nearer the eyes are brought to a condition simulating emmetropia, the less work is imposed on the muscular machinery concerned in the maintenance of binocular single vision.

While there is a unanimity of opinion that the grossest refractive errors, particularly astigmatism, cause these asthenopic symptoms, there still exists in the minds of a minority contingent of the profession at least some skepticism as to any beneficial effects resulting from the cor-

rection of a low degree of astigmatism measured by the quarter dioptry cylinder.

Personally I am convinced these slight imperfections in corneal curvature often are fruitful sources of eye strain, including headaches. That I may contribute my mite in favor of the quarter dioptry cylinder, I wish to report fifty cases of asthenopia in which this glass has been the principal, in most cases the only, treatment. In a very few cases I have prescribed a collyrium for a conjunctival congestion or an ointment for a slight blepharitis, but even here the error of refraction has been considered the cause, and these local troubles manifestations of eye strain. In no case did any condition of the patient's health or extrinsic muscles seem to demand special attention. All were under forty years of age, and all were corrected with a suspended accommodation.

In collecting data for this report I have talked personally with eleven, and addressed the following question to thirty-nine patients: "For what symptoms did you consult me, and what, if any, relief have you gotten from your glasses?"

Of the eleven with whom I talked ten reported satisfaction and one dissatisfaction with their glasses. From the thirty-nine letters I have received thirty-one answers, leaving eight of the whole fifty cases unheard from. Twenty-nine answer favorably, all expressing satisfaction, of different degrees, with their glasses. Two answer negatively. Of the eight who failed to answer, two letters were returned to the sender, their address not being the same as when they visited me. The remaining six failed to answer, either from indifference, or perhaps were dissatisfied without wishing to so express themselves.

At the risk of being tedious, I wish to report a few typical cases in full. To report them all would tax your patience too much. I have made no attempt to arrange



cases in groups according to symptoms, the answers being so varied, it seemed difficult so to do.

*Cases*—Mr. B., Sunnysdale, Kansas, aged 36, farmer, was given May 25, '93, glasses as follows: Conv. .25, cy. ax.  $60^{\circ}$  for R. and conv. .25 cy. ax.  $120^{\circ}$  for L. E., with directions to wear them constantly, waking hours. While doing some work for a member of Mr. B.'s family he asked if I would recommend him to a good physician, as he wished to consult him about his headaches. I suggested his eyes as a possible cause, and asked him to allow me to examine them. The above glasses were the result of my examination. December 6, '94, he says: "Since my earliest remembrance I have averaged two days a week in bed with sick headache. Never suspected my eyes as a cause. I saw well, and they never hurt me. Since putting on my glasses eighteen months ago, I have had headaches, but not oftener than once a month at any time. Haven't had any sickness of my stomach. My headaches are getting less and less frequent, and very much lighter. I wouldn't trade my glasses for the best farm in Kansas." February 23, '95, he called to inform me he had been without his glasses ten days, having broken his frames. Four days after he ceased wearing them he had one of the worst attacks of sick headache he ever had. Was in bed forty hours. The headache and nausea were terrible.

Prof. H., aged 35, principal public schools of Newton, Kas., consulted me June 23, '94. He was given a conv. .25 cy. ax.  $45^{\circ}$  for R. and conv. .25 cy. ax.  $135^{\circ}$  for L. E., with instructions to wear glasses constantly. January 3, '95, he writes me as follows: "I was troubled so much with nervous headaches. I couldn't read ten minutes without a severe pain in eyes and head. While I despise wearing glasses, I must say I couldn't get along without them. They have helped me so much. I can now read for hours at a time without feeling much pain or weariness from my reading."

Miss H., Newton, Kas., aged 18, consulted me August 3, '94. Under homatropine and cocaine discs, she would not accept any spherical glass. After repeated trials I prescribed conc. .25 cy. ax.  $90^\circ$  for R. and conv. .25 ax.  $90^\circ$  for L. E. She had worn conv. .50 sph. given her by another oculist. January 3, '95, she writes: "I could use my eyes but a few minutes until they would ache so badly I had to stop my work. Could not pursue my school studies. The glasses have helped them very much indeed. I have attended school since September and have had no trouble to keep up with my classes."

Mr. S., age 27, Wichita, Kas., banker, consulted me March 18, 1893. I prescribed conv. .25 cy. ax.  $180^\circ$  for R. and conv. .25 cy. ax.  $180^\circ$  for L. E. December 6, 1894, he reported as follows: "My principal complaint was car sickness. I could n't go to Newton without having a terrible headache. My business frequently calls me to New England, and I dreaded the trips. While riding at night I would have no trouble, but in daytime, if I kept my eyes open, I would suffer terribly. I have just returned from such a trip and I wore my glasses every waking minute, and I haven't had a headache during my whole trip."

Edna Dillman, age 10, Wichita, Kas., was referred to me by Dr. J. E. Oldham for an examination of the eyes, to see if I could find cause for obstinate headaches. Finding astigmatism, with greatest corneal curvature horizontally, I prescribed, August 6, 1894, a conv. .25 cy. ax.  $180^\circ$  for each eye, and told her to wear her glasses all the time. January 5, 1895, her mother reports headaches very much improved. Has hardly complained at all for the last month. Goes to school steadily and is learning fast.

Mrs S., Bluff City, Kas., age 26, consulted me May 1, 1893, about her eyes, complaining of some discomfort on use, but principally of a succession of styes that were most annoying. I gave her conv. .25 cy. ax.  $90^\circ$  for each

eye. January 10, 1895, she writes me: "I never read or sew without my glasses. I have had but one stye since. They have benefited my eyes greatly."

Mrs. P., Colwich, Kas., age 23, was given conv. .25 cy. ax.  $90^{\circ}$  for each eye June 9, 1894. January 9, 1895, she writes: "My principal complaints were painful, burning sensations in eyeballs. I could n't use my eyes any length of time without causing me to have severe headaches. They were very sensitive to light; often had a dimness of vision while using them; could scarcely see at times. I have had no headache since I got my glasses. I am compelled to wear them all the time, as it seems as if the light was too strong without them. I have gotten much relief from my glasses, for which I am very thankful."

Inez Neal, Caldwell, Kas., age 12, was given conv. .25 cy. ax.  $180^{\circ}$  for each eye, March 26, 1894. January 2, 1895, Nrs. N. writes me: "Inez complained of blurring of words when reading, and of objects when looking steadily at them, and of darting pains in eyes. Since she commenced wearing her glasses she never has complained of pain or blurring."

Miss P., Burrton, Kas., age 22, was given conv. .25 cy. ax.  $180^{\circ}$  for each eye, August 10, 1894. January 2, 1895, she writes: "I have been greatly benefited by my glasses. The headaches I suffered so much from have been very greatly relieved. My eyes do not ache now, unless I read too long. I am very much pleased with them."

Miss S., Goddard, Kas., sent me by Dr. Sippey, of Garden Plain, Kas., was given conv. .25 cy. ax.  $180^{\circ}$  for each eye, May 13, 1893. January 7, 1895, she writes: "My trouble was headache. I wore the glasses for nearly a year, and am sorry to say received no benefit from them."

Miss W., age 22, Potwin, Kas., was fitted with glasses June 9, 1894 (conv. .25 cy. ax.  $105^{\circ}$  for R. and conv. .25 cy. ax.  $75^{\circ}$  for L. E.). January 19th she writes: "Have worn the glasses constantly. They not only have re-

lieved my eyes of that aching and tired feeling, but have rendered them so strong that I use them in my work as a teacher without fatigue."

Mrs. H., Wellington, Kas., aged 25, sent me by Dr. Spitler, February 10, '94. She was given conv. .25 cy. ax. 60° for R. and conv. .25 cy. ax. 120° for L. E. January 8, 1895, she writes: "My eyes would pain me very much and become red and inflamed on use. When I first commenced wearing my glasses objects seemed tilted one side and the floor did not seem level. After one or two weeks these sensations passed away. While my eyes still trouble me some, my glasses are of great assistance in reading or sewing."

Mr. H., Andover, Kas., aged 38, farmer, referred to me by Dr. Burton, of that place, for relief from aching eyes and head. November 14, '95, he was given conv. cy. ax. 135° for R., and conv. .25 cy. ax. 45° for L. E. January 14, he reports: "I suffered from sick headache once or twice a month, for years. For past year could use my eyes but a few minutes at a time; they would itch, burn and smart, and the light, both natural and artificial, would give me great distress. Had to shade them almost constantly. Have worn my glasses two months. For a few days, when I first began wearing them, I felt as though I was standing on my head, they made me so dizzy. I persisted in wearing them constantly, and now they are all right. I haven't had a headache since, and can read by lamplight two or three hours with no discomfort."

Mr. J., Enid, O. T., aged 38, real estate and insurance agent, consulted me October 6, '94, about a severe blepharitis marginalis and conjunctival congestion, stating that he had spent much time and money trying to get a cure but had failed. Had never had glasses suggested. He declared his eyes never gave him any discomfort, though the redness of his lid margins was so conspicuous as to amount almost to a deformity. I ordered conv. .25,

cy. ax.  $180^{\circ}$  for each eye, advising him to wear them all the time; also gave him an eye wash and a mercurial ointment. January 15, '95, he writes: "My eyes are slowly improving. Think if I would wear my glasses all the time, as you advised me, they would get well. I only wear them in close work, disliking so much to wear them at other times. They certainly have greatly benefited my eyes."

Miss F., seamstress, aged 19, Wichita, Kas., referred to me November 29, '93, by Dr. Hupp, for an examination of eyes for headache which he had been unable to relieve. I prescribed conv. .25 cy. ax.  $90^{\circ}$  for each eye. January 7, '94, she informs me: "My eyes are easy, and I have no more headaches so long as I wear my glasses, but let me try to do without them, there is trouble."

Mr. M. Maple City, Kas., aged 28, student, was given, September 1, '94, a conv. .25 cy. ax.  $180^{\circ}$  for each eye, hoping to relieve obstinate asthenopic symptoms and a conjunctival congestion. January 5, '95, he writes me: "The result of your work is not entirely satisfactory. Since I commenced using the glasses I find it quite impossible to do without them. At present I am able to do three hours more work a day than I could before I received the glasses. The redness of my eyes sometimes disappears entirely; at other times they get very red."

Miss A., aged 23, dressmaker, Wichita, Kas., sent me by Dr. Fabrique. She was given, February 3, '94, a conv. .25, cy. ax.  $90^{\circ}$  for R., and conv. .25 cy. ax.  $135^{\circ}$  for L. E. January 2, '95, she reports: "I cannot do without my glasses, even for distance. Without them my eyes tire and blur and get red. I wouldn't think of doing without them."

Miss D. aged 21, Wichita, Kas., consulted me December 18, '93, for headache and uncomfortable eyes, caused by sewing or reading. I ordered conv. .25 cy. ax.  $135^{\circ}$ , for R. and conv. .25 cy. ax.  $45^{\circ}$  for L. E. January 4, '95, at my request, she called to inform me she had not worn

her glasses. She had tried, but they had made her dizzy and she had given up trying to wear them. I examined her eyes again, and found she accepted the same glasses. After encouraging her to give them a further trial, she departed, promising to report at some future time.

Miss S., aged 19, school girl, Wichita, Kas., referred to me by Dr. Fabrique. She was given, January 3, '93, a conv. 25 cy. ax.  $180^\circ$  for R. and conv. .25 cy. ax.,  $165^\circ$  for L. E. January 15, '95 she writes: "I suffered continually from headaches and pain in my eyes, especially after reading or study. The glasses have relieved me entirely, and I anticipate no further trouble."

Chas. C., Fullerton, Kas., aged 15, consulted me October 13, '94, for aching eyes; would water much on use. Examination showed about 5 D. of hypermetropia, and much amblyopia of right eye. Left eye accepted conv. .50 sph. conc. .25 cy. ax,  $150^\circ$ , giving him vision 20-20. He was given a plane glass for right, and the above cylinder for left eye. January 15, '95, he writes: "I go to school regularly, and wear my glasses all the time. While wearing them my eyes neither water or ache. They are a great help."

Walter H., aged 15, Wellington, Kas., consulted me September 2, '94, complaining much of headache, tired and watery eyes after looking at a book for a short time. He was given conv. .25 cy. ax.  $120^\circ$  for R. and conv. .25 cy. ax.  $90^\circ$  for L. E. January 3, '95, his father writes: "His difficulties seem to be entirely overcome by the use of his glasses."

I have no confidence in my ability to diagnose these slight degrees of astigmatism with any objective test. My reliance is a mydriatic, with trial case, test types and Green's astigmatic card.

If there is any axial emmetropia, I correct it with the spherical glass giving best vision, and then proceed with my cylinders. Directing my patient's attention to the

astigmatic card, resembling a wheel, I ask him if he discovers that each spoke contains three black lines and two white spaces? If he answers in the affirmative, as he no doubt will, I ask him to look carefully and see if he discerns the white spaces in each spoke, equally distinct in all directions? If astigmatism is present, even of low degree, and our patient is a close observer, he will tell us that in one direction the white spaces are indistinct or absent, giving an appearance of a solid black line. Adding now the correcting cylindrical glass at a proper angle the spokes will all appear alike. When tested with Snellen's type at twenty feet the same glass ought, and will, give the sharpest definition of vision.

Dr. Price, of Nashville, Tenn., has suggested that the exact axis of our glass can best be gotten with a stronger cylinder, a suggestion of value which I have often put in practice.

In confirming results I prize the crossed cylinder of Jackson's finding it of great assistance to the patient in determining the exact strength of the cylinder.

Dr. Prince, of Springfield, Ill., suggests the abandonment of the heavy trial frame, with rotating cells, which accompanies our trial cases. They have always seemed cumbersome to me, for which reason I do not use them. The simple cell is much lighter and more convenient. With it, by reversing their surfaces, cylinders with axes mounted at forty-five degrees can be made to assume any angle.

*Summary.*—I found normal vision, without glasses, in forty-eight cases. Two cases had 20-30 raised to 20-20 with the cylinders. In both cases their apparent error was corrected with a minus cylinder, while the mydriatic correction required plus cylinders of same strength, with axes at right angles. I always prefer the plus cylinder.

In two cases there were no symptoms whatever referable to the eyes—one of migraine, and one with blepha-

ritis and conjunctival congestion. Both cases were much improved after wearing their glasses.

Headaches were found a frequent symptom. With Dr. Chisolm, of Baltimore, who has so ably championed the quarter dioptry cylinder, I confidently expect to find astigmatism, oftenest of slight degree in these headache cases, particularly if there is any associated complaint of eye distress. If headaches improve under a mydriatic, I confidently prognosticate relief from glasses. Here, as in all other cases, I much prefer atropia, having most confidence in its cyclophlegic properties, and liking, too, the therapeutic effect of the prolonged rest given the eyes by that mydriatic.

There were numerous complaints of photophobia. It is a distressing symptom. Patients complain that both direct and reflected rays of light are painful—the former from their intensity, the latter probably from the acquired additional heat given them by our stone walks and asphalt pavements.

A frequent complaint from cylinders, with axes placed obliquely, comes from disturbed ocular perceptions, with consequent dizziness and sometimes nausea. In my experience these sensations soon disappear under constant use of the glasses. On account of dizzy sensations one of my patients ceased wearing her glasses before she had given them a fair trial.

Of my fifty cases, thirty-nine have reported satisfactory results and three unsatisfactory. Counting the eight not heard from as failures, we still have left a percentage of success of seventy-eight.

In my humble judgment the quarter dioptry cylinder has come to stay. So long as my patients continue to express relief from distressing symptoms, I shall continue to prescribe it. It is not a superfluous placebo. On the contrary, in intelligently selected cases it is a remedy of great value, both to the oculist and his patient.



## **CONSTITUTION AND BY-LAWS.**

[Adopted May 2, 1888 — Revised May 10, 1893, and May 16, 1905.]

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### **ARTICLE I.—NAME.**

**SECTION 1.** The name of this Society shall be The Kansas Medical Society.

### **ARTICLE II.—OBJECTS.**

**SECTION 1.** The object of this Society shall be the advancement of medical knowledge, the elevation of the medical profession, and the promotion of all measures adapted to the relief of suffering, the improvement of the health, and the protection of the lives of the community.

### **ARTICLE III.—MEMBERS.**

**SECTION 1.** The permanent members shall consist of those who are members of this Society at the time of the adoption of this Constitution, and who shall continue to conform to the By-Laws, and of those who have served in the capacity of delegates, and have maintained their membership as provided by the By-Laws. All members three years in arrears for annual dues shall be reported by the Treasurer to the Judicial Council.

**SEC. 2.** Physicians and surgeons eminent in the profession, who are non-residents of this State, or graduates of medicine who reside in the State and have retired from practice, may be elected honorary members.

## ARTICLE IV.—OFFICERS.

SECTION 1. The officers of this Society shall consist of the President, two Vice-Presidents, a Recording Secretary, a Corresponding Secretary, a Treasurer, the Librarian, and a Judicial Council of five and a Publishing Committee of five. The officers shall be elected at the annual meeting, and shall hold their offices for one year, or until their successors are elected, except the Recording Secretary, who shall be elected for three years, and the Judicial Council, which shall be elected, one for one year, one for two years, one for three years, one for four years, and one for five years, and thereafter one shall be elected annually.

## ARTICLE V.—MEETINGS.

[Amended May, 1895.]

SECTION 1. One regular meeting shall be held each year in the city of Topeka, Kas. Special meetings may be held as provided by the By-Laws.

## ARTICLE VI.—CODE OF ETHICS.

SECTION 1. The Code of Ethics of this Society shall be that of the American Medical Association, which is hereby acknowledged as binding upon all its members.

## ARTICLE VII.—PUNISHMENTS.

SECTION 1. This Society shall have the power to censure, suspend, or expel, any member convicted of violating its provisions, or who may be guilty of any act which may be considered derogatory to the honor of the medical profession, on the recommendation of the Judicial Council, and in the manner provided in the By-Laws, and by a vote of three-fourths of the members present.

## ARTICLE VIII.—AUXILIARY SOCIETIES.

SECTION 1. The members of the profession in any county or district in the State may form a county or district society, which shall become auxiliary to this State Society, and entitled to send delegates whenever its constitution and by-laws have been approved by the Judicial Council of this Society.

## ARTICLE IX.—AMENDMENTS.

SECTION 1. This Constitution may be amended or altered by the proposed amendment or alteration being submitted in full in writing at the annual meeting, and spread upon the minutes. At the next annual meeting it may be taken up and acted upon, and if the proposed amendment, or the substance thereof, receive the vote of three-fourths of the members present, it shall be adopted.

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BY-LAWS.

## ARTICLE I.—DUTIES OF OFFICERS.

SECTION 1. The terms of the officers shall commence at the close of the meeting at which they are elected.

SEC. 2. The President shall preside at all meetings of the Society, preserve order, appoint all committees not otherwise provided for, sign all orders upon the Treasurer for the payment of money when ordered by the Society, and perform such other duties as the Society may require of him. At the annual meeting during his term of office he shall deliver an address upon some appropriate subject.

SEC. 3. In the absence of the President, the First Vice-President, and in his absence, also, the Second Vice-President shall act as President. In the absence of the President and both Vice-Presidents, the Society shall elect a President *pro tempore*.

SEC. 4. The Recording Secretary shall keep a correct record of all the proceedings of the Society, and prepare the same for publication, and shall have charge of and carefully preserve all the books, papers and other documents of the Society, and keep a list of the members, with their postoffice address, and collect all moneys due the Society and receipt for same; notify new members of their election within thirty days thereafter; conduct the correspondence; attest all orders drawn upon the Treasurer by order of the Society, and discharge such other duties as may be required of him, and make a report of his doings and the condition of the Society at each annual meeting.

SEC. 5. The Corresponding Secretary shall attend to all correspondence, arrange papers for publication, make programs for meetings and send notices of meetings of the Society, and whatever duties may appertain to the office.

SEC. 6. The Treasurer shall have charge of the funds of the Society; collect all fees, dues and fines promptly, and keep a correct account thereof; pay out moneys only on orders signed by the President and attested by the Secretary, and at each annual meeting submit a detailed report of the exact condition of the treasury, and at the end of his term hand over to his successor all the moneys and other property in his possession belonging to his office.

SEC. 7. It shall be the duty of the Judicial Council to examine the constitution and by-laws of the auxiliary societies, and, when approved, to transmit a copy to the Secretary of this Society with their approval. They shall examine into all ethical questions which may come up on appeal from any auxiliary society in this Society, and give their decision thereon to this Society through the Secretary annually.

SEC. 8. It shall be the duty of the Librarian to preserve all the books, pamphlets, and pathological specimens,

belonging to the Society, and keep the same where they can be consulted and examined by the members as they may desire.

#### ARTICLE II.—SECTIONS.

SECTION 1. The Society shall be divided into sections as follows: Practice of Medicine and Electro-Therapeutics, Surgery, Gynecology, Ophthalmology, Rhinology, and Otology, each having a Chairman and Secretary.

#### ARTICLE III.—COMMITTEES.

SECTION 1. The Publication Committee shall consist of the Secretary of each section and the Recording Secretary of the Society, who shall be the Chairman of the same.

SEC. 2. The Committee on Nominations shall consist of one member from each county represented in the meeting of the Society, which shall be named by members of the several counties, who shall report to the Society the names of suitable persons for officers and the regular committees for the ensuing year. They may also nominate special committees to report on such subjects as they may deem advisable.

SEC. 3. At each meeting there shall also be appointed a Committee of Arrangements and Credentials for the ensuing meeting, whose duty shall be to make all necessary arrangements for the meeting, prepare the program, and examine the credentials of all delegates and permanent members who shall attend, and report the same to the Society.

#### ARTICLE IV.—FEES AND DUES.

[Amended May, '95.]

SECTION 1. The initiation fee shall be five dollars. Every member shall pay two dollars dues annually, to be collected at the annual meeting. Assessments may be made at any meeting by a vote of two-thirds of the

members present. Any member who is in arrears for dues for three years shall be dropped from membership.

SEC. 2. The penalty for a violation of the Constitution, By-Laws or Code of Ethics, shall be fine, suspension, or expulsion. An affirmative vote of three-fourths of the members present shall be necessary for the suspension or expulsion, to be taken after the decision of the Judicial Council, and without debate.

#### ARTICLE V.—MISCELLANEOUS.

SECTION. 1. *Quorum*.—Five members shall constitute a quorum for the transaction of business.

SEC. 2. *Special Meetings*.—Special meetings may be called by the President and Secretary, on the written request of three members; the Secretary to give ten days' notice to each member of the time, place and objects of said meeting; and no business shall be transacted except such as shall have been designated in the call.

SEC. 3. *Notices*.—A notice shall be valid which has been served personally, or by writing deposited in the postoffice to the address of the party.

SEC. 4. *Usage*.—Parliamentary usage shall govern in the transaction of business, when not otherwise provided for.

SEC. 5. *Amendments*.—These By-Laws may be suspended or amended at an annual meeting, by resolution submitted in writing, and receiving two-thirds majority of the members present.

#### ARTICLE VI.—PAPERS

SECTION 1. All papers read before the Society become the property of the same, and must be handed to the Secretary at once. Only the names of members of the Society shall appear on the program for papers except by invitation.

SEC. 2. All papers read before this Society shall be limited to twenty minutes.

ARTICLE VII.—BILLS.

SECTION 1.—The Corresponding Secretary is hereby invested with exclusive power to incur and pay bills on behalf of the Society.

ARTICLE VIII.—ORDER OF BUSINESS.

1. Reading minutes of previous meeting.
2. Report of Committee of Arrangements and Credentials.
3. Calling the roll of members.
4. Election of new members.
5. Address of President.
6. Appointment of Auditing and Nominating Committees.
7. Report of officers.
8. Report of regular committees.
9. Report of special committees.
10. Reading of volunteer papers and communications.
11. Report of Nominating Committee, and action on the same.
12. Report of Committee on Necrology, Auditing Committee.
13. Miscellaneous business, appointing committees.
14. Adjournment.





## ROLL OF MEMBERS.

Axtell, J. T. ....	Newton.	Callins, Melvin .....	Oxford.
Ames, L. L. ....	S. Greenfield, Mo.	Crowley, J. W. ....	Salina.
Aikman, R. ....	Fort Scott.	Cordler, A. H. ....	Kansas City, Mo.
Arbuthnot, C. M. ....	Belleville.	Carpenter, C. F. ....	Girard.
Abeles, E. ....	Kansas City, Ks.	Carver, J. B. ....	Fort Scott.
Abdelal, A. G. ....	Lawrence.	Carson, A. W. ....	Dover.
Alkire, H. L. ....	Topeka.	Crans, J. ....	Leonardville.
Akers, G. W. ....	Stafford.	Cook, L. C. ....	Ellsworth.
		Cannon, Willis. ....	Smith Center.
Biddle, Thos. C. ....	Emporia.	Cunkle, L. J. ....	Madison.
Boyd, Gaston .....	Newton.	Conry, A. A.* .....	Florence.
Barnett, W. O.* .....	Wellington.	Conry, T. J. ....	Florence.
Buck, L. A. ....	Peabody.	Cannon, J. H. ....	Toluca, Ill.
Bryan, J. D. ....	Lindsburg.	Campbell, W. W. ....	Atchison.
Browne, F. B. ....	Boston, Mass.	Coldren, E. V. ....	Topeka.
Briarly, J. H. ....	Glasco.	Coleman, G. B. ....	Powhattan.
Black, R. S. ....	Ottawa.	Comer, J. J. ....	Willis.
Beil, D. ....	Richmond.	Cole, Geo. E. ....	Girard.
Basham, D. W. ....	Neal.	Costello, J. F. ....	Howard.
Braydon, S. H. ....	Mapleton.	Cornell, H. M. ....	Kansas City, Ks.
Boyer, S. B. ....	Cherokee.	Colladay, S. M. ....	Hutchinson.
Blair, Alonzo. ....	Pittsburg.	Church, Mary V. ....	Topeka.
Boone, W. W. ....	Highland.		
Barker, W. E. ....	Chanute.	Daugherty, P. ....	Junction City.
Bogle, W. H. ....	Atchison.	Deweese, Wm. B. ....	Salina.
Brogan, R. A. ....	Osage Mission.	Day, Mary Gage. ....	Wichita.
Ball, S. E. ....	Fort Scott.	Davis, J. T. ....	Independence.
Bower, W. C. ....	Lebanon.	Dally, F. M. ....	Beloit.
Beers, Geo. L. ....	Topeka.	Dykes, H. A. ....	Topeka.
Berquest, G. E. ....	Lindsburg.	Dykes, J. P. H. ....	Stafford.
Brooking, S. L. ....	Wellsville.	Dykes, J. B. ....	Lebanon.
Blair, G. A. ....	Girard.	Damour, F. ....	Balckow, Mo.
Barnes, Ida C. ....	Topeka.	Daniels, H. P. ....	Scottsville.
Bradley, C. C. ....	New Castle, Colo.	Dingers, M. F. ....	Potter.
Beals, G. C. ....	Alma.	Davis, A. W. ....	Holton.
Bunn, W. S. ....	Lawrence.	De Niedman, V. F. ....	Pittsburg.
Bennett, Geo. D. ....	Newton.	Dunn, F. P. ....	Ellinwood.
Boyd, G. A. ....	Edgerton.		
Boggs, M. C. ....	Coolidge.	Emerson, Geo. ....	Winfield.

\* Deceased.

Eastman, B. D.....	Topeka.	Hughes, O. W.....	Jewell City.
Ewing, C. W.....	Edgerton.	Hibben, J. B.....	Topeka.
Evans, J. G.....	Winfield.	Hawley, J. E.....	Burr Oak.
Eldridge, E. W.....	Alta Vista.	Hartshorn, W.....	Junction City.
Eager, J. L. B.....	Kansas City, Kas.	Harvey, Z. T.....	Council Grove.
Egelston, J. C.....	Topeka.	Herrick, S. J.....	Everest.
		Herring, Aaron.....	Highland Sta.
Flack, A. C.....	Fredonia.	Hamell, Thos.....	Olathe.
Furst, O. J.....	Peabody.	Hollenbeak, G. W.....	Cimarron.
Frost, Geo. W*.....	Emporia.	Harris, R. G.....	Marion.
Felty, J. W.....	Abilene.	Hayes, Noah.....	Seneca.
Fay, J. R.....	Topeka.	Herring, B. F.....	Sabetha.
Ford, Mary Edith.....	Ft. Scott.	Hall, W. C.....	Coffeyville.
Fryer, B. E.....	Kansas City, Mo.	Harrison, E. L.....	Kansas City, Mo.
Fabrique, A. H.....	Wichita.		
Furley, C. C.....	Wichita.	Jacobs, L. D.....	Emporia.
Fairchild, S. V.....	Miltonvale.	Jewell, J. E.....	Moran.
		Jones, S. W.....	Leavenworth.
Gilbert, J. L.....	Topeka.	Jeannotte, J. A.....	Clyde.
Garey, J. H.....	Wilsey.	Jones, B. E.....	Buffalo.
Graves, A. C.....	Cherokee.	Jones, Wiley.....	Huron.
Gill, H. Z.....	Pittsburg.	Janes, G. K.....	Williamsburg.
Grey, S. J.....	Winfield.	Johnson, G. F.....	Leoti.
Griffith, J. D.....	Kansas City, Mo.	James, J. W.....	Columbus.
Gray, Geo. M.....	Kansas City Kas.		
Gibson, W. B.....	Topeka.	Kirkwood, J. W.....	Wichita.
Gardner, Chas.....	Emporia.	Ketchersid, J. N.....	Hope.
Giles, A. P.....	Beulah.	Klippel, C.....	Hutchinson.
Gilman, Mary E.....	Cherokee.	Kackley, J. J.....	Chetopa.
Gilbert, Geo. C.....	Pittsburg.	Kesner, C. C.....	Leroy.
Gardner, J. B.....	Girard.	Kretzmeir, J. W.....	Clay Center.
Grubbs, L. Y.....	Topeka.		
Grant, F. E.....	Ottawa.	Ligget, E. E.....	Oswego.
Green, F. F.....	Olathe.	Longenecker, D. F.....	Emporia.
Glasscock, S. S.....	Kansas City Kas.	Leff, H. H.....	Logan.
Gardner, M. N.....	Greenleaf.	Lyman, L. J.....	Manhattan.
Gill, W. W.....	Haddam.	Lee, C. P.....	Pleasanton.
Graham, D. Y.....	Nortonville.	Lindsay, W. S.....	Topeka.
Gould, H. G.....	Medicine Lodge.	Lanning, S.....	Kingman.
		Lewis, J. E.....	Highland.
Harvey, W. S.....	Salina.	Lewis, J. P.....	Topeka.
Holcomb, C. M.....	Winfield.	Lease, R. W.....	Redfield.
Hamilton, E. E.....	Wichita.	Lobdell, M. J.....	Beloit.
Herr, Francis C.....	Ottawa.	Limmer, Geo. L.....	Peoria, Ill.
Hoffman, Jacob Z.....	Wichita.	Longshore, D. K.....	Topeka.
Hall, T. H, 1311 Taylor ave.	St. Louis.	Leary, M. F.....	Gaylord.
Hissem, H. Z.....	Ellsworth.	Laughhead, G. G.....	Coldwater.
Hoover, W. D.....	Paola.	Lindsay, Thos.....	Garnett.
Haskins, M. H.....	Kingman.	Lindley, J. M.....	Atchison.
Hogeboom, Geo. W.....	Topeka.	Lane, J. A.....	Leavenworth.
Hall, Sarah C.....	Ft. Scott.	Lowe, Geo. N.....	Randall.
Hayes, Wm. H.....	Yates Center.	Lottridge, M. M.....	Sylvia.
Holeman, J. T.....	Garland.		
Holmes, C. J.....	Gaylord.	Mitchell, J. A.....	Arkansas City.
Hume, C. R.....	Anadarko, I. T.	Masterman, B. F.....	Independence.
Haskings, H. E.....	Olathe.	McClay, John.....	Minneapolis.

# ROLL OF MEMBERS.

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McGuire, J. W. ....	Hutchinson.	Porter, J. W. ....	Richfield.
Milligan, J. A. ....	Garnett.	Porter, M. C. ....	Idana.
Mitchell, M. R. ....	Topeka.	Preston, J. F. ....	Arlington.
Minney, J. E. ....	Topeka.	Pontéaus, C. E. ....	Fairview.
Martin, Jeffrey ....	Clinton, Ia.	Peers, T. W. ....	Topeka.
Milton, J. A. ....	Dodge City.	Peak, O. L. ....	Springfield, Mo.
Munn, L. H. ....	Topeka.	Potter, J. T. ....	Mt. Hope.
Murphy, L. H. ....	Minneapolis.	Pelton, D. R. ....	Topeka.
Mathis, W. H. ....	Waverly.	Purdue, G. C. ....	Wichita.
Marner, G. P. ....	Marion.	Perkins, A. N. ....	Fredonia.
Markham, R. M. ....	Scammon.	Payne, E. B. ....	Galena.
Martin, W. M. ....	Wellington.	Priest, W. R. ....	Concordia.
Maxson, G. D. ....	Hartford.	Porter, J. L. ....	Paola.
Morrison, Geo. A. ....	Columbus.	Peters, A. B. ....	Mankato.
Miller, H. H. ....	Rossville.	Powell, L. M. ....	Topeka.
Miner, H. C. ....	Topeka.	Pierce, J. B. ....	Eureka.
Murdock, S. ....	Onelda.	Parks, S. H. ....	Longton.
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Mulvane, G. J. ....	Topeka.		
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Morgan, B. F. ....	Riley.	Reynolds, L. ....	Horton.
Magee R. S. ....	Topeka.	Russell, H. H. ....	Lucas.
Morton, R. J. ....	Green.	Rairdon, C. W. ....	Earton.
Morgan, C. C. ....	Clay Center.	Rünyon, E. C. ....	Wichita.
Mall, Lewis. ....	Hanover.	Reese, W. H. ....	Pleasanton.
Mitchell, P. S. ....	Atchison.	Rögers, E. P. ....	Topeka.
Miller, J. E. ....	Salina.	Roberts, H. S. ....	Manhattan.
Moore, E. F. ....	Doniphan.	Reynolds, S. E. ....	Clay Center.
McClintock, J. C. ....	Topeka.	Rögers, D. F. ....	Ottawa.
McClintock, C. S. ....	Topeka.	Reed, S. S. ....	Soldier.
McCrea, Maggie L. ....	Winchester.	Round, F. L. ....	Dighton.
McCracken, J. W. ....	Sterling.	Roberts, R. A. ....	Kansas City, Ks.
McAdams, C. E. ....	Wichita.		
McGuire, C. A. ....	Topeka.	Spitler, S. W. ....	Wellington.
McKenzie, J. A. ....	El Dorado.	St. John, P. D. ....	Wichita.
McVey, W. E. ....	Topeka.	Seaton, J. H. ....	Newton.
McVey, R. E. ....	Topeka.	Scott, T. W. ....	Stafford.
McCully, W. A. ....	Independence.	Stewart, J. P. ....	Clay Center.
McDonald, W. S. ....	Fort Scott.	Storrs, Frances. ....	Topeka.
McCandless, A. B. ....	Holton.	Smith, A. J. ....	Leavenworth.
McCasey, J. H. ....	Dayton, Ohio.	Stapleton, F. P. ....	Lynn.
McCartha, T. L. ....	Dodge City.	Slagle, B. W. ....	Smith Center.
Maher, Margaret ....	Downs.	Stuart, W. W. ....	Courtland.
May, J. W. ....	Kansas City, Ks.	Scott, Jno. R. ....	Clay Center.
Mead, W. B. ....	Oberlin.	Sheldon, S. E. ....	Topeka.
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		Sawhill, W. F. ....	Concordia.
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		Smith, F. J. ....	Dennis.
Osborn, W. F. ....	Baldwin.	Surber, C. C. ....	Delphos.
Oldham, J. E. ....	Wichita.	Shelley, S. T. ....	Mulvane.
O'Brien, D. S. ....	Beloit.	Smolt, C. F. ....	Nickerson.
Ochiltree, H. M. ....	Haddam.	Strawn, J. N. ....	Elk City.
		Seabrook, C. C. ....	Burlingame.

Switzer, W. R.....	Salina.	Venard, J. N.....	Ness City..
Salthouse, H. L.....	McPherson.	Ward, A. A.....	Fulton.
Shaw, S. J.....	Great Bend.	Wetherby, B. J.....	Hutchinson.
Slosson, Emily B.....	Sabetha.	Ward, M. B.....	Topeka.
Sabine, Andrew.....	Garden City.	Wall, G. A.....	Topeka.
Stivers, C. C.....	Horton.	Werthner, J.....	Marion.
Sterrett, W. M.....	Jetmore.	Wentworth, L. F.....	Bridgewater, Mass.
Sample, J. A. G.....	Atchison.	Whittecarr, O. B.....	Peabody.
Stewart, S. G.....	Topeka.	Warriner, W. L.....	La Cygne.
Sellards, A. W.....	Scranton.	Wood, D. L.....	Dighton.
Sellards, A. B.....	Scranton.	Wright, J. J.....	Emporia.
Stewart, B. S.....	Netawaka.	Wakefield, C. A.....	Eureka.
Sidlinger, S. H.....	Hutchinson.	Williams, W.....	Pittsburg.
Seacat, Geo. M.....	Kinsley.	Williams, Geo. W.....	Pittsburg.
Smethers, W. H.....	Moline.	Willits, J. R.....	Fredonia.
Scheidt, Eugene.....	Topeka.	Wever, J. L.....	Leavenworth.
Sutherland, H. H.....	Heirington.	Wright, W. T.....	Winfield.
Tucker, H. C.....	Derby.	Wilson D. D.....	Nortonville.
Terry, N. F.....	Lyons.	Wright, A. H.....	Ottawa.
Truehardt, P. P.....	Sterling.	Whittaker, G. D.....	Colony.
Taylor, N. G.....	Berryton.	Winn, W. B.....	Detroit.
Tenny, A. P.....	Kansas City, Kas.	Welch, H. G.....	Hutchinson.
Traylor, J. B.....	McCune.	Welch, W. E.....	Pittsburg.
Trueworthy, J. W.....	Kansas City, Mo.	Wiley, F. M.....	Fredonia.
Tyler, D. C.....	Clifton.	Wallace, Agnes McK	Topeka.
Tefft, H. K.....	Topeka.	White, L. R.....	Scandia.
Todd, V. L.....	Kansas City, Mo.	Williston, S. W.....	Lawrence.
Titterington, M. B.....	Burrton.	Young, V. P.....	Cullison.
Uhls, C. C.....	White City.	Zane, T. M.....	Osage City.
Uhls, W. A.....	Gardner.		

### Honorary Members.

Adams, C. W.....	Kansas City, Mo.	Jackson, J. W.....	Kansas City, Mo.
Allen, J. M.....	Liberty, Mo.	King, Willis P.....	" "
Ashton, W. E.....	Philadelphia, Pa.	Logan, J. E.....	" "
Bogle, M. A.....	Kansas City, Mo.	Lanphear, Emory	St. Louis, Mo.
Carpenter, W. B.....	Leavenworth.	Porter, D. R.....	Kansas City, Mo.
Duncan, J. H.....	Kansas City, Mo.	Punton, John.....	" "
Drake, N. A.....	" "	Richmond, J. M.....	St. Joseph, Mo.
Dugan, W. C.....	Anchorage, Ky.	Schauffler, E. W.....	Kansas City, Mo.
Ellston, J. W.....	Kansas City, Mo.	Todd, S. S.....	" "
Foster, Hal.....	" "	Tiffany, Flavel B.....	" "
Gant, S. G.....	" "	Tyree, W. C.....	" "
Halley, Geo.....	" "	Thompson, J. H.....	" "
Heylum, W. R.....	Rich Hill, Mo.	Wilson, C. E.....	" "
Johnson, F. M.....	Kansas City, Mo.		

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